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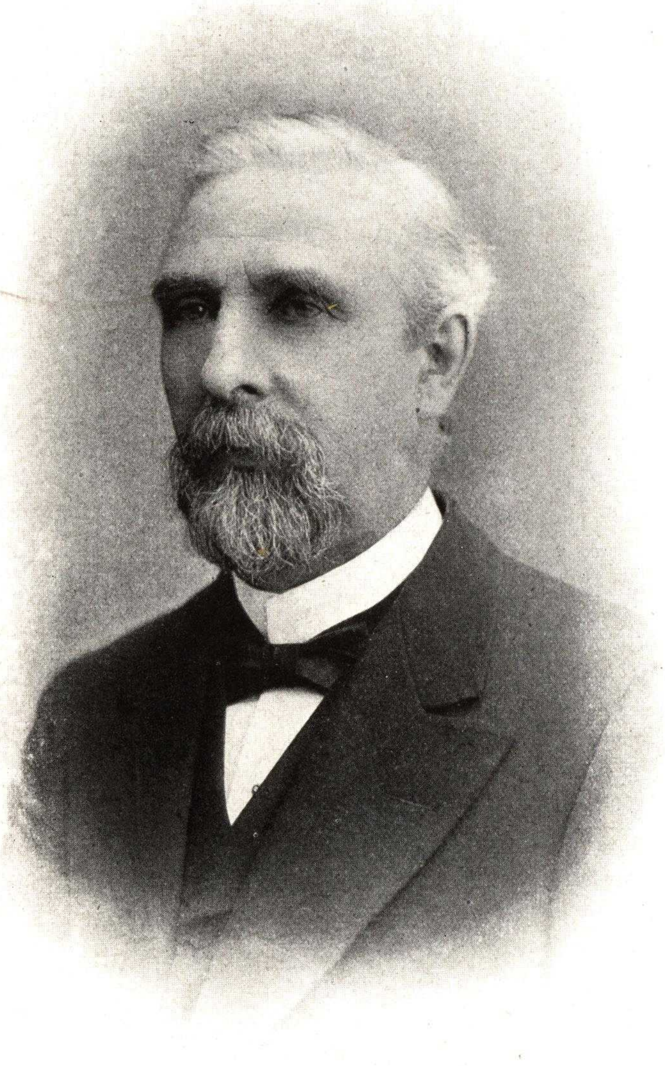

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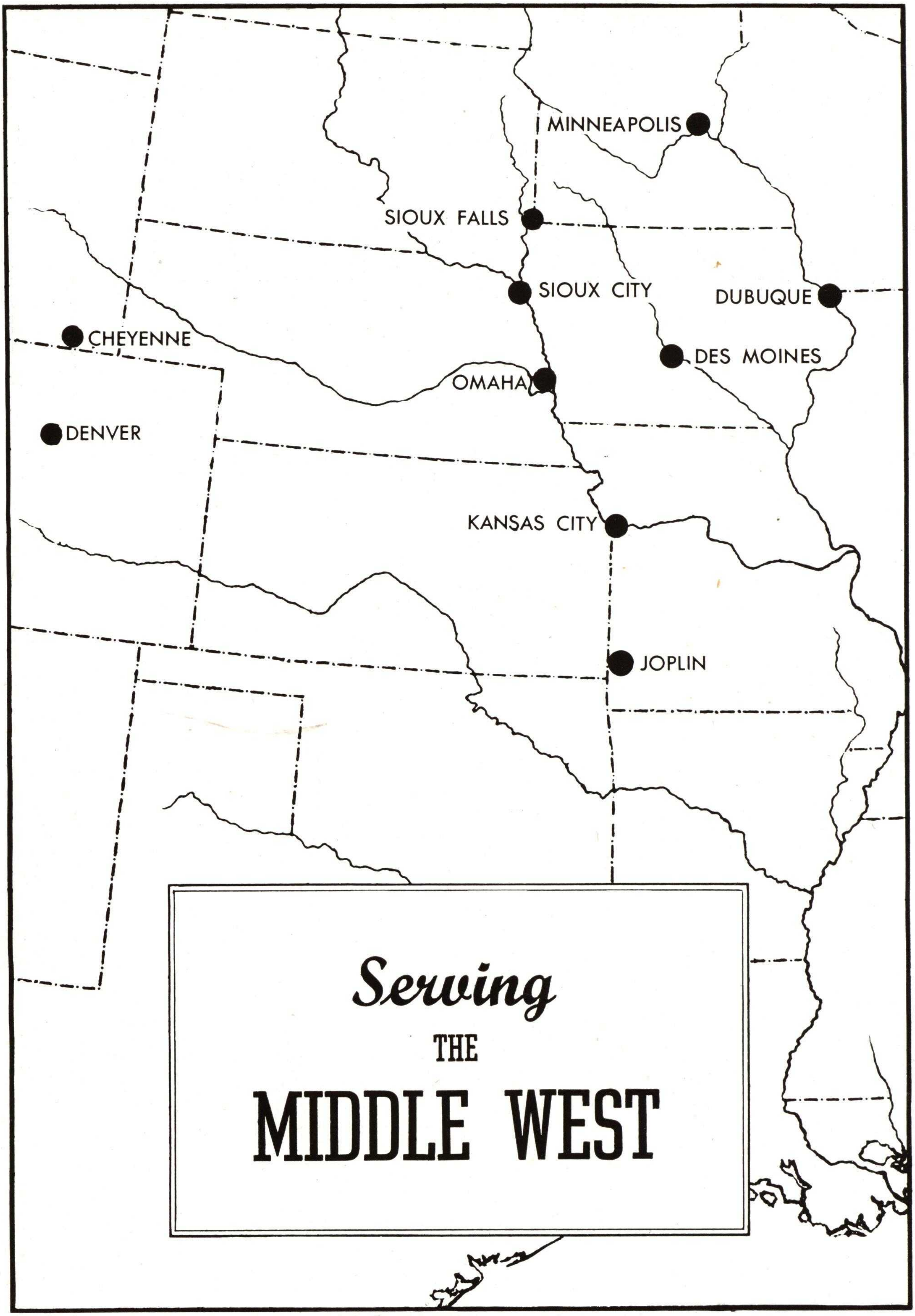
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EST.
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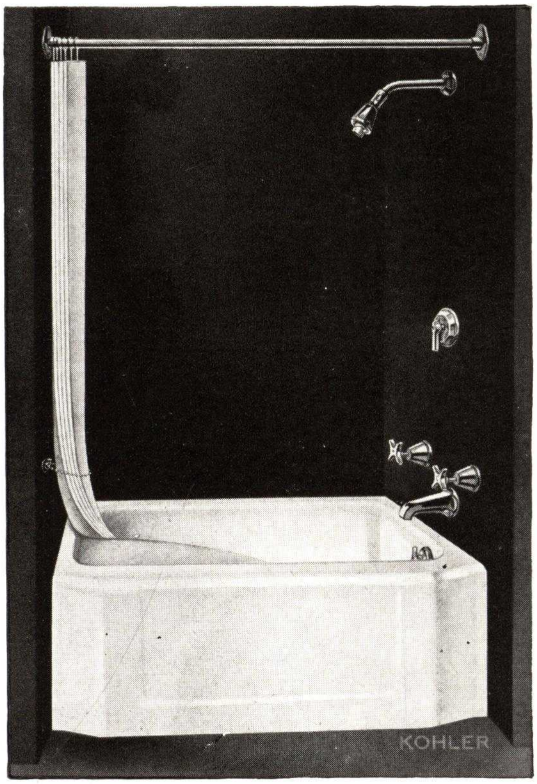
McDonald



No. K-206-CM, Right Outlet
No. K-205-CM, Left Outlet

Times Square Enameled Cast Iron Recess Bath having integral seat and diagonal tub with outlet at front of side wall.

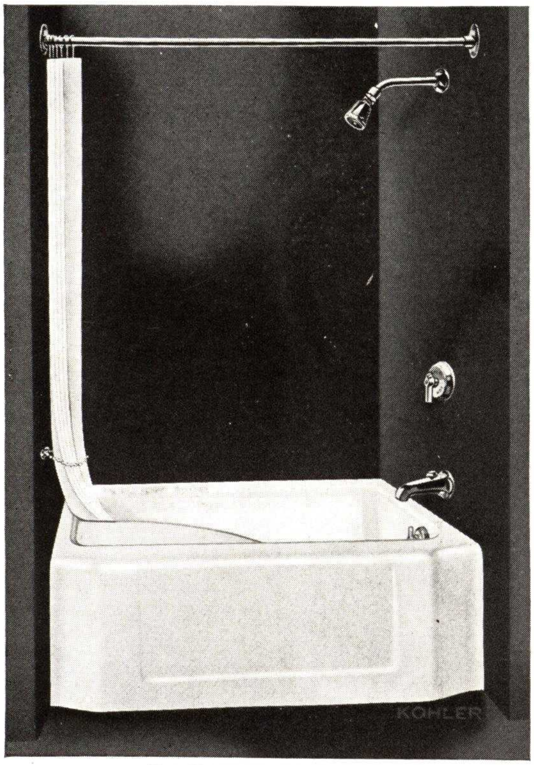
Fittings: All-metal combination built-in shower and bath fitting with over-rim supply spout; two ½-inch compression valves for bath, with renewable units, cross handles, and escutcheons; shower head with volume regulator, adjustable ball joint, bent supply arm, and escutcheon; ½-inch shower mixing valve with temperature regulating screw, renewable seats, metal handle, and escutcheon; 1½-inch pop-up drain with lever through overflow; curtain rod, hold-back hook, and chain.

Curtain and pins not furnished.

Exposed Metal: Chromium plated.

Length Overall	inches	48
Length between Finished Walls	inches	46¼
Width Overall at Ends	inches	46½
Width Overall at Center	inches	51
Width from Finished Wall at Ends	inches	45⅝
Width from Finished Wall at Center	inches	50⅛
Depth at Outlet	inches	15¼
Height from Floor	inches	15½
Height Overall	inches	16
Width of Rim at Center	inches	5
Approximate Shipping Weight	pounds	535

Furnished in acid-resisting white or colored enamel.



No. K-206-CF, Right Outlet
No. K-205-CF, Left Outlet

Times Square Enameled Cast Iron Recess Bath having integral seat and diagonal tub with outlet at front of side wall.

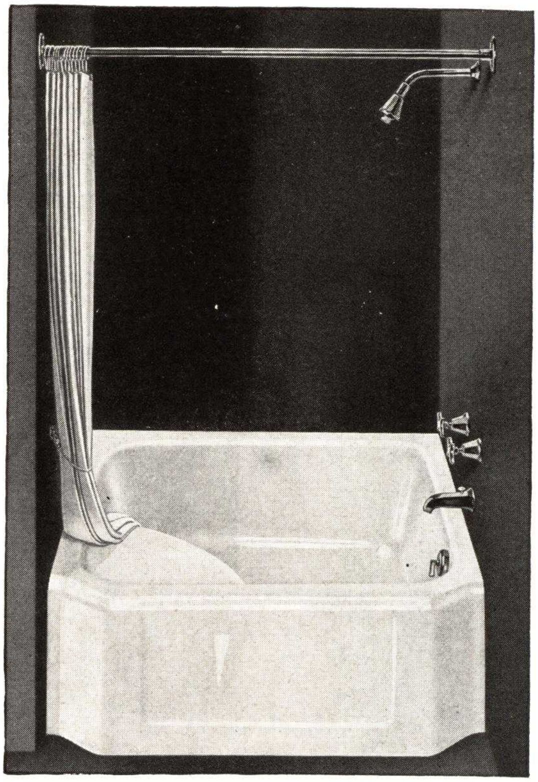
Fittings: All-metal combination built-in shower and bath fitting with over-rim supply spout with integral diverter valve to shower; ½-inch mixing valve with temperature regulating screw, renewable seats, lever handle, and escutcheon; shower head with volume regulator, adjustable ball joint, bent supply arm, and escutcheon; 1½-inch pop-up drain with lever through overflow; curtain rod, hold-back hook, and chain.

Curtain and pins not furnished.

Exposed Metal: Chromium plated.

Length Overall	inches	48
Length between Finished Walls	inches	46¼
Width Overall at Ends	inches	46½
Width Overall at Center	inches	51
Width from Finished Wall at Ends	inches	45⅝
Width from Finished Wall at Center	inches	50⅛
Depth at Outlet	inches	15¼
Height from Floor	inches	15½
Height Overall	inches	16
Width of Rim at Center	inches	5
Approximate Shipping Weight	pounds	535

Furnished in acid-resisting white or colored enamel.



No. K-206-CA, Right Outlet
No. K-205-CA, Left Outlet

Times Square Enameled Cast Iron Recess Bath having integral seat and diagonal tub with outlet at front of side wall.

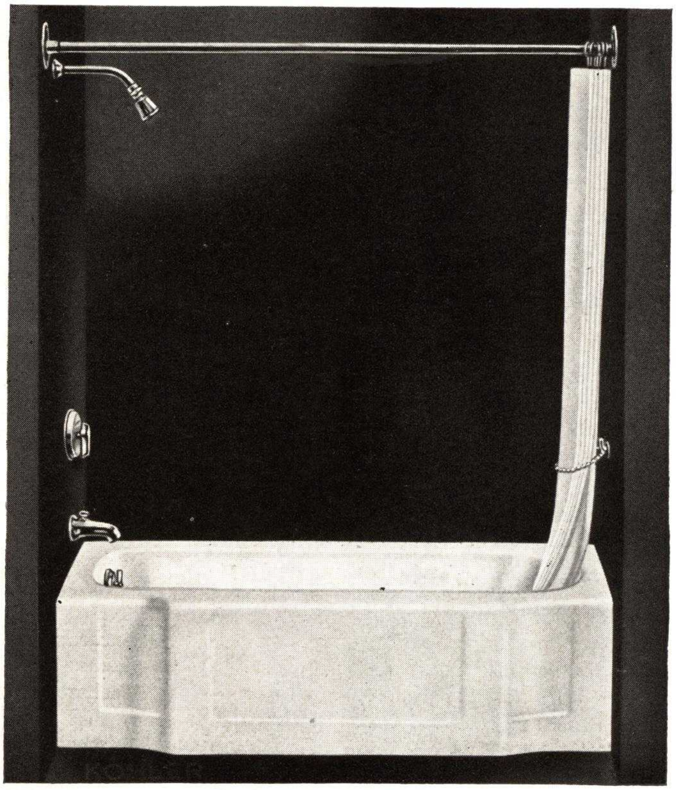
FITTINGS: All-metal combination built-in shower and bath fitting with over-rim supply spout with integral diverter valve to shower; two ½-inch compression valves with renewable units, cross handles, and escutcheons; self-cleansing shower head with adjustable ball joint, bent supply arm, and escutcheon; 1½-inch pop-up drain and with lever handle operating through overflow; curtain rod, hold-back hook, and chain.

Curtain and pins not furnished.

EXPOSED METAL: Chromium plated.

Length Overall	inches	48
Length between Finished Walls	inches	46¼
Width Overall at Ends	inches	46½
Width Overall at Center	inches	51
Width from Finished Wall at Ends	inches	45⅝
Width from Finished Wall at Center	inches	50⅛
Depth at Outlet	inches	15¼
Height from Floor	inches	15½
Height Overall	inches	16
Width of Rim at Center	inches	5
Approximate Shipping Weight	pounds	523

Furnished in acid-resisting white or colored enamel.



No. K-525-CF, Left Outlet
No. K-526-CF, Right Outlet

Cosmopolitan Enameled Cast Iron Recess Bath to build into recess, with bench rim at front and outlet at end wall.

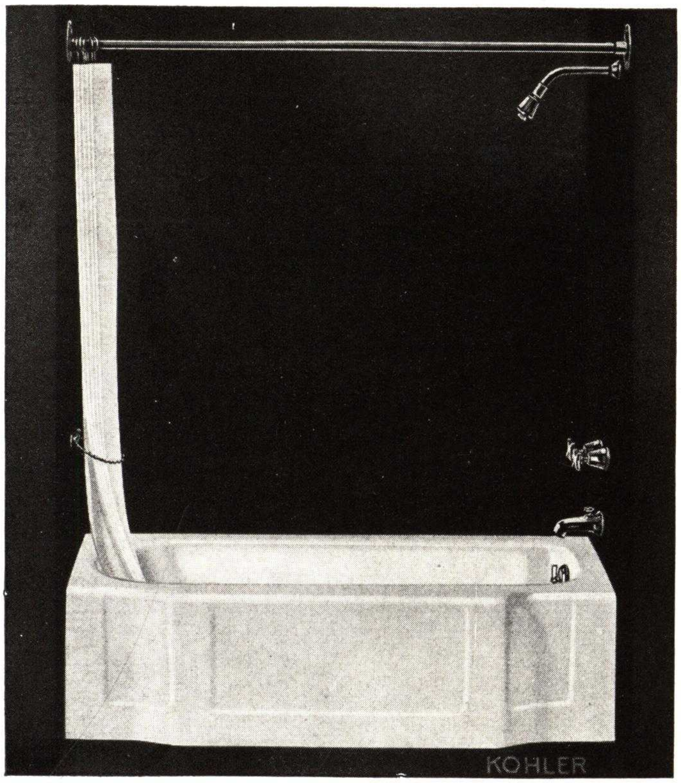
FITTINGS: All-metal combination built-in shower and bath fitting with over-rim supply spout with integral diverter valve to shower; ½-inch mixing valve with temperature regulating screw, renewable seats, lever handle, and escutcheon; shower head with volume regulator, adjustable ball joint, bent supply arm, and escutcheon; 1½-inch pop-up drain with lever through overflow; curtain rod, hold-back hook, and chain.

Curtain and pins not furnished.

EXPOSED METAL: Chromium plated.

Nominal Size	feet	4½	5	5½
Length Overall	inches	54	60	66
Length between Finished Walls	inches	52½	58¼	64¼
Width Overall at Ends	inches	31	31	31
Width Overall at Center	inches	33	33	33
Width from Fin. Wall at Ends	inches	30⅛	30⅛	30⅛
Width from Fin. Wall at Center	in.	32⅛	32⅛	32⅛
Depth Inside	inches	15¼	15¼	15¼
Height from Floor	inches	15½	15½	15½
Height Overall	inches	16	16	16
Width of Rim at Ends	inches	4⅛	4⅛	4⅛
Width of Rim at Center	inches	6	6	6
Approximate Shipping Weight, less Fittings	pounds	370	400	455

Furnished in regular white and acid-resisting white or colored enamel.



No. K-526-CA, Right Outlet
No. K-525-CA, Left Outlet

Cosmopolitan Enameled Cast Iron Recess Bath to build into recess, with bench rim at front and outlet at end wall.

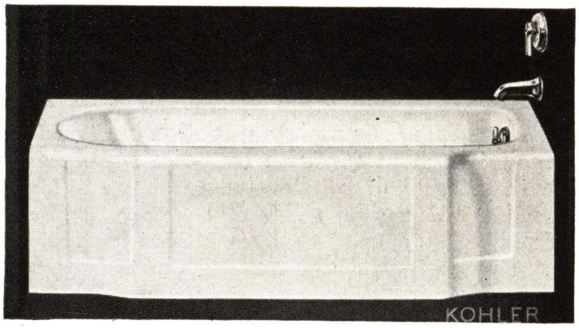
FITTINGS: All-metal combination built-in shower and bath fitting with over-rim supply spout with integral diverter valve to shower; two ½-inch compression valves for bath with renewable units, cross handles, and escutcheons; shower head with adjustable ball joint, bent supply arm, and escutcheon; 1½-inch pop-up drain with lever through overflow, curtain rod, hold-back hook, and chain.

Curtain and pins not furnished.

EXPOSED METAL: Chromium plated.

Nominal Size . . . . feet	4½	5	5½
Length Overall . . . . inches	54	60	66
Length between Finished Walls inches	52¼	58¼	64¼
Width Overall at Ends . . . . . inches	31	31	31
Width Overall at Center . . . . . inches	33	33	33
Width from Fin. Wall at Ends. inches	30⅛	30⅛	30⅛
Width from Fin. Wall at Center. inches	32⅛	32⅛	32⅛
Depth Inside . . . . inches	15¼	15¼	15¼
Height from Floor . . . . inches	15½	15½	15½
Height Overall . . . . inches	16	16	16
Width of Rim at Ends . . . . . inches	4⅛	4⅛	4⅛
Width of Rim at Center . . . . inches	6	6	6
Approximate Shipping Weight, less Fittings . . . . pounds	370	400	455

Furnished in regular white and acid-resisting white or colored enamel.



No. K-526-CG, Right Outlet
No. K-525-CG, Left Outlet

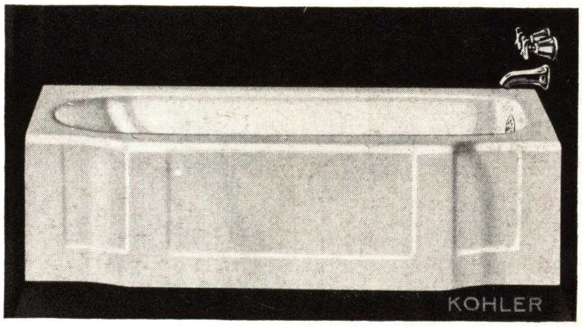
Cosmopolitan Enameled Cast Iron Bath to build into recess, with bench rim at front and with end outlet.

FITTINGS: All-metal combination built-in bath supply and drain, with over-rim supply spout; ½-inch mixing valve with temperature regulating screw, renewable seats, lever handle, and escutcheon; 1½-inch pop-up drain with lever through overflow.

EXPOSED METAL: Chromium plated.

Nominal Size . . . . feet	4½	5	5½
Length Overall . . . . inches	54	60	66
Length between Finished Walls . . . inches	52¼	58¼	64¼
Width Overall at Ends . . . . . . inches	31	31	31
Width Overall at Center . . . . . inches	33	33	33
Width from Fin. Wall at Ends . . . . inches	30⅛	30⅛	30⅛
Width from Fin. Wall at Center . . inches	32⅛	32⅛	32⅛
Depth Inside . . . . inches	15¼	15¼	15¼
Height from Floor . . . . inches	15½	15½	15½
Height Overall . . . . inches	16	16	16
Width of Rim at Ends . . . . . . inches	4⅛	4⅛	4⅛
Width of Rim at Center . . . . . inches	6	6	6
Approx. Ship. Wt., less Fittings . . pounds	370	400	455

Regular white and acid-resisting white or colored enamel.



No. K-526-CI, Right Outlet
No. K-525-CI, Left Outlet

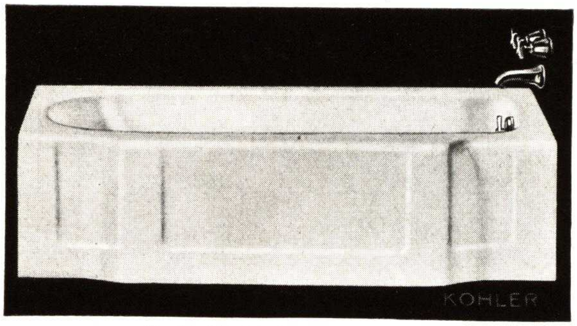
Cosmopolitan Enameled Cast Iron Bath to build into recess, with bench rim at front and with end outlet.

Fittings, all-metal combination built-in bath supply and drain, with over-rim supply spout; two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons; 1½-inch connected drain and overflow with bead chain and rubber stopper.

Exposed metal chromium plated.

Nominal Size . . . . feet	4½	5	5½
Length Overall . . . . inches	54	60	66
Length between Finished Walls . . . inches	52¼	58¼	64¼
Width Overall at Ends . . . . . . inches	31	31	31
Width Overall at Center . . . . . inches	33	33	33
Width from Fin. Wall at Ends . . . . inches	30⅛	30⅛	30⅛
Width from Fin. Wall at Center . . inches	32⅛	32⅛	32⅛
Depth Inside . . . . inches	15¼	15¼	15¼
Height from Floor . . . . inches	15½	15½	15½
Height Overall . . . . inches	16	16	16
Width of Rim at Ends . . . . . . inches	4⅛	4⅛	4⅛
Width of Rim at Center . . . . . inches	6	6	6
Approx. Ship. Wt., less Fittings . . pounds	370	400	455

Regular white and acid-resisting white or colored enamel.



No. K-526-CP, Right Outlet
No. K-525-CP, Left Outlet

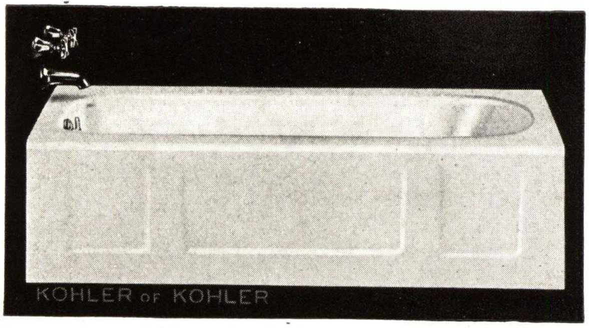
Cosmopolitan Enameled Cast Iron Bath to build into recess, with bench rim at front and with end outlet.

Fittings, all-metal combination built-in bath supply and drain, with over-rim supply spout; two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons; 1½-inch pop-up drain with lever through overflow.

Exposed metal chromium plated.

Nominal Size.......................feet	4½	5	5½
Length Overall...................inches	54	60	66
Length between Finished Walls...inches	52¼	58¼	64¼
Width Overall at Ends............inches	31	31	31
Width Overall at Center..........inches	33	33	33
Width from Fin. Wall at Ends....inches	30⅛	30⅛	30⅛
Width from Fin. Wall at Center..inches	32⅛	32⅛	32⅛
Depth Inside.....................inches	15¼	15¼	15¼
Height from Floor................inches	15½	15½	15½
Height Overall...................inches	16	16	16
Width of Rim at Ends.............inches	4⅛	4⅛	4⅛
Width of Rim at Center...........inches	6	6	6
Approx. Ship. Wt., less Fittings..pounds	370	400	455

Regular white and acid-resisting white or colored enamel.



No. K-555-CP, Left Outlet
No. K-556-CP, Right Outlet

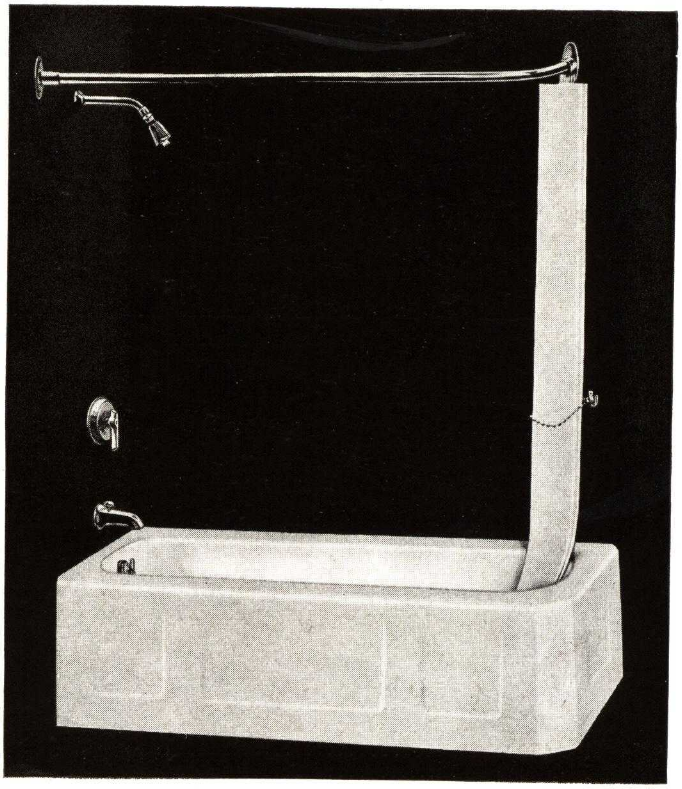
Cosmopolitan Enameled Cast Iron Bath to build into recess, with end outlet.

Fittings, all-metal combination built-in bath supply and drain, with over rim supply spout, two ½-inch built-in compression valves with renewable seats, cross handles, and escutcheons, and 1½-inch pop-up drain, with lever through overflow.

Exposed metal chromium plated.

Nominal Size.....................feet	4½	5	5½
Length Over All................inches	54	60	66
Length from Finished Wall Lines.inches	52¼	58¼	64¼
Width Over All.................inches	31	31	31
Width from Finished Wall Line...inches	30⅛	30⅛	30⅛
Width Inside...................inches	24	24	24
Depth Inside...................inches	15¼	15¼	15¼
Height from Floor..............inches	15½	15½	15½
Height Over All................inches	16	16	16
Width of Rim...................inches	4⅛	4⅛	4⅛
Approx. Ship. Wt., less Ftgs.....pounds	310	353	412

Regular white and acid-resisting white or colored enamel.



No. K-551-CF, Left Corner
No. K-554-CF, Right Corner

Cosmopolitan Enameled Cast Iron Corner Bath to build into corner, with outlet at end wall.

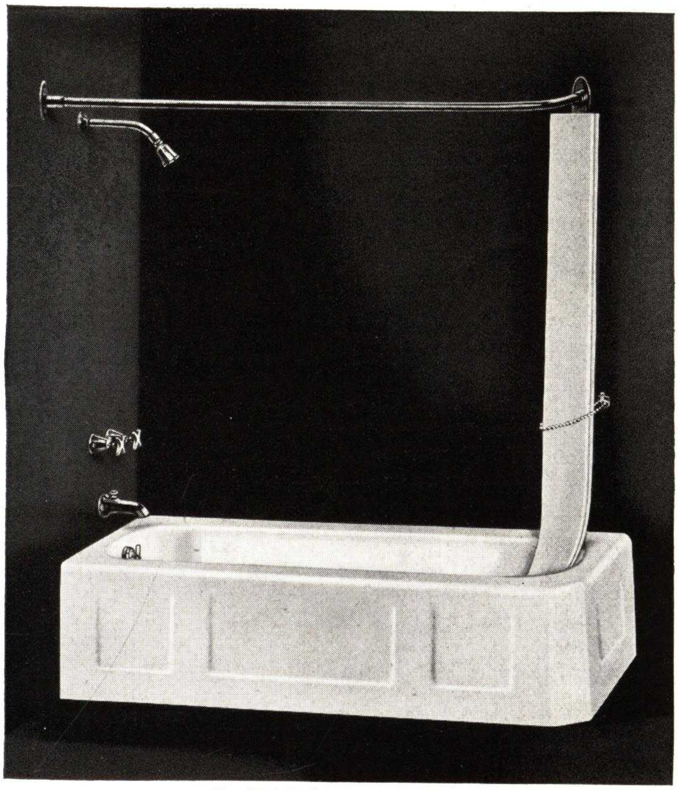
FITTINGS: All-metal combination built-in shower and bath fitting with over-rim supply spout with integral diverter valve to shower, ½-inch mixing valve with renewable seats, metal handle, and escutcheon; shower head with volume regulator, adjustable ball joint, bent supply arm, and escutcheon; 1½-inch pop-up drain with lever through overflow, curtain rod, hold-back hook, and chain.

Curtain and pins not furnished.

EXPOSED METAL: Chromium plated.

Nominal Size..................feet	4½	5	5½
Length Overall..............inches	55	61	67
Length from Finished Wall Line.inches	54⅛	60⅛	66⅛
Width Overall...............inches	31	31	31
Width from Finished Wall Line.inches	30⅛	30⅛	30⅛
Depth Inside................inches	15¼	15¼	15¼
Height from Floor...........inches	15½	15½	15½
Height Overall..............inches	16	16	16
Width of Rim................inches	4⅛	4⅛	4⅛
Approximate Shipping Weight, less Fittings.................pounds	375	435	467

Furnished in regular white and acid-resisting white or colored enamel.



No. K-551-CA, Left Corner
No. K-554-CA, Right Corner

Cosmopolitan Enameled Cast Iron Corner Bath to build into corner, with outlet at end wall.

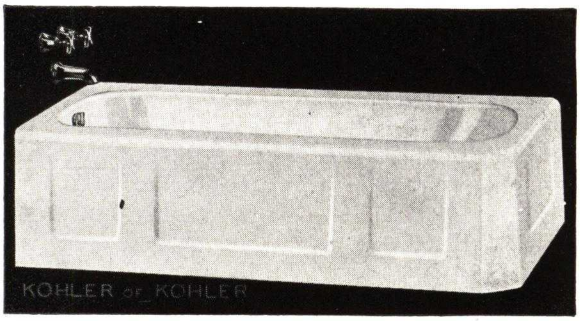
Fittings: All-metal combination built-in shower and bath fitting with over-rim supply spout with integral diverter valve to shower; two ½-inch built-in compression valves for bath with renewable units, cross handles, and escutcheons; shower head with volume regulator, adjustable ball joint, bent supply arm and escutcheon; 1½-inch pop-up drain with lever through overflow; curtain rod, holdback hook, and chain.

Curtain and pins not furnished.

Exposed Metal: Chromium plated.

Nominal Size	feet	5	5½
Length Overall	inches	61	67
Length from Finished Wall Line	inches	60⅛	66⅛
Width Overall	inches	31	31
Width from Finished Wall Line	inches	30⅛	30⅛
Depth Inside	inches	15¼	15¼
Height from Floor	inches	15½	15½
Height Overall	inches	16	16
Width of Rim	inches	4⅛	4⅛
Approximate Shipping Weight, less Fittings	pounds	430	473

Furnished in regular white and acid-resisting white or colored enamel.



No. K-551-CI, Left Corner
No. K-554-CI, Right Corner

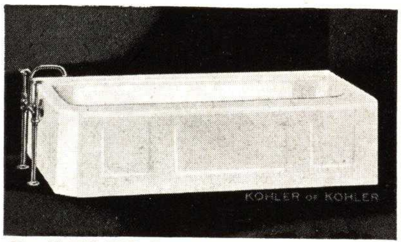
Cosmopolitan Enameled Cast Iron Bath to build into corner, with outlet at built-in end.

Fittings: All-metal combination built-in bath supply and drain, with over-rim supply spout; two ½-inch built-in compression valves with renewable units, cross handles, and escutcheons; and 1½-inch connected drain and overflow with bead chain and stopper.

Exposed Metal: Chromium plated.

Nominal	feet	5	5½
Length Overall	inches	61	67
Length from Finished Wall Line	inches	60⅛	66⅛
Width Overall	inches	31	31
Width from Finished Wall Line	inches	30⅛	30⅛
Width Inside	inches	24	24
Depth Inside	inches	15¼	15¼
Height from Floor	inches	15½	15½
Height Overall	inches	16	16
Width of Rim	inches	4⅛	4⅛
Approx. Ship. Wt., less Ftgs.	pounds	436	473

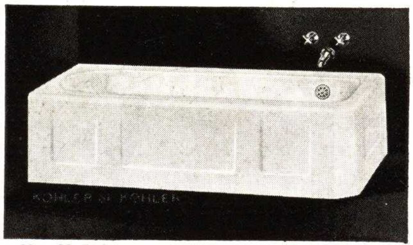
Regular white and acid-resisting white or colored enamel.



No. K-553-HK, Right Corner—Left Outlet
No. K-552-HK, Left Corner—Right Outlet

Cosmopolitan Enameled Cast Iron Bath to build into corner and with outlet at exposed end.

Fittings, all metal exposed supply fitting with supply pipes to floor, ½-inch valves, renewable seats, cross handles, spout over rim, and concealed pop-up drain.

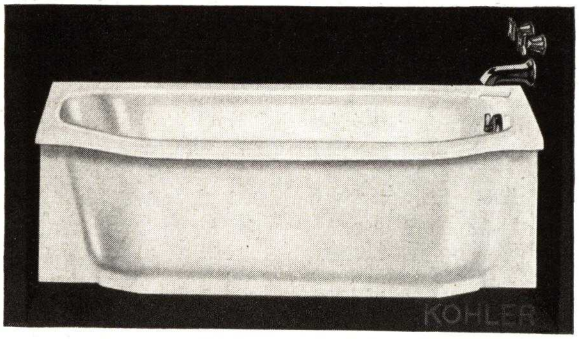


No. K-552-RI, Left Corner—Right Outlet
No. K-553-RI, Right Corner—Left Outlet

Cosmopolitan Enameled Cast Iron Bath to build into corner and with outlet at back wall near exposed end.

Fittings, all-metal combination built-in bath supply and drain with over-rim supply spout, two ½-inch built-in compression valves with renewable seats, cross handles, and escutcheons, and 1½-inch connected drain and overflow with bead chain and rubber stopper.

Made in 4½, 5, and 5½-foot sizes with regular white and acid-resisting white or colored enamel.



No. K-926-CP, Right Outlet
No. K-925-CP, Left Outlet

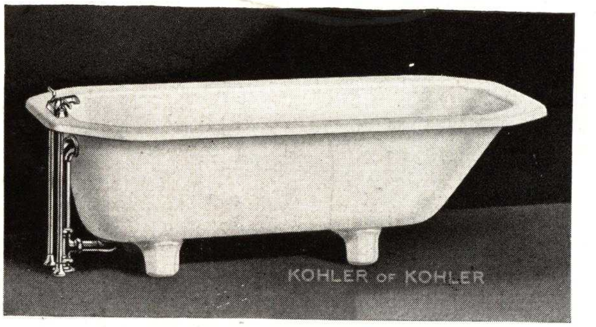
Potomac Enameled Cast Iron Bath to build into recess, with two cast-in soap dishes and with end outlet. Enameled inside, painted outside.

Fittings: All-metal combination bath supply and drain, with over-rim supply spout; two ½-inch compression valves with renewable units and lever handles; 1½-inch pop-up drain with lever through overflow.

Exposed Metal: Chromium plated.

Nominal Size	feet	4½	5
Length Overall	inches	54	60
Length between Finished Walls	inches	52¼	58¼
Width Overall at Ends	inches	28	28
Width from Finished Wall at Ends	inches	29⅛	29⅛
Width Overall at Center	inches	30	30
Depth Inside	inches	15½	15½
Height from Floor	inches	16¼	16¼
Height Overall	inches	16¾	16¾
Width of Rim	inches	3½	3½
Approx. Ship. Weight, less Fittings	pounds	320	327

Furnished in regular white or acid-resisting white enamel.



No. K-1000-T

Liberty Enameled Cast Iron Bath with flat rim. Supported on feet.

Fittings, ledge-type compression double bath faucet with raised spout, indexed metal lever handles, and 1½-inch connected drain and overflow with chain and stopper.

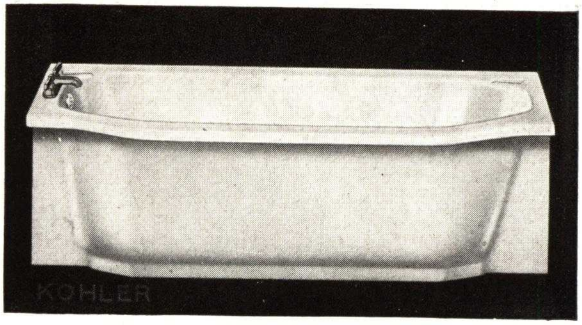
Supply pipes, $\frac{9}{16}$-inch O.D. tubing to floor with coupling nuts and metal floor escutcheons.

Fittings furnished chromium plated.

Nominal Size	feet	4½	5
Length Over All	inches	54	60
Width Over All	inches	30	30
Depth Inside	inches	15⅜	15⅜
Height to Top of Rim	inches	20	20
Width of Rim	inches	3½	3½
Approximate Shipping Weight, less Fittings	pounds	255	270

Regularly furnished enameled inside only, painted outside.

Furnished in regular white enamel only.



No. K-925-TI, Left Outlet
No. K-926-TI, Right Outlet

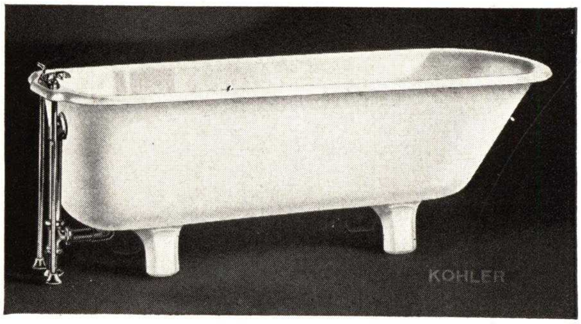
Potomac Enameled Cast Iron Bath to build into recess, with two cast-in soap dishes and with end outlet. Enameled inside, painted outside.

Fittings: All-metal combination bath supply and drain, with over-rim supply spout; two ½-inch compression valves with renewable units and lever handles; 1½-inch connected drain and overflow with bead chain and stopper.

Exposed Metal: Chromium plated.

Nominal Size	feet	4½	5
Length Overall	inches	54	60
Length between Finished Walls	inches	52¼	58¼
Width Overall at Ends	inches	28	28
Width from Finished Wall at Ends	inches	29⅛	29⅛
Width Overall at Center	inches	30	30
Depth Inside	inches	15½	15½
Height from Floor	inches	16¼	16¼
Height Overall	inches	16¾	16¾
Width of Rim	inches	3½	3½
Approximate Shipping Weight, less Fittings	lbs.	320	327

Furnished in regular white or acid-resisting white enamel.



No. K-1060-TI

Narospace Enameled Cast Iron Bath with flat rim. Supported on feet.

Fittings: Ledge type compression double bath faucet with raised spout, indexed metal lever handles, and 1½-inch connected drain and overflow with bead chain and stopper.

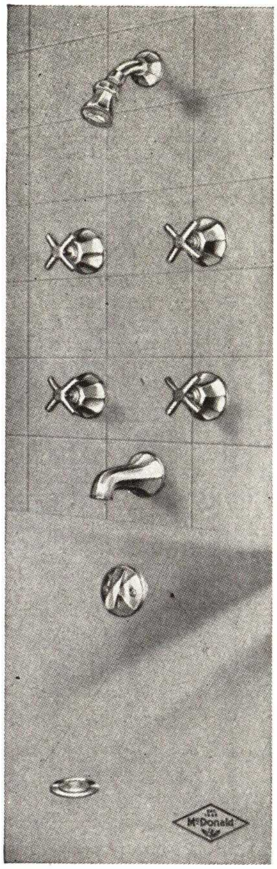
Supply Pipes: $\frac{9}{16}$-inch O.D. tubing to floor with coupling nuts and metal floor escutcheons.

Exposed Fittings: Chromium plated.

Nominal Size	feet	4½
Length Overall	inches	54
Width Overall	inches	26
Depth Inside	inches	17
Height to Top of Rim	inches	21½
Width of Rim	inches	2
Approx. Shipping Weight, less Fittings	pounds	236

Regularly furnished enameled inside only, painted outside.

Furnished in regular white enamel only.



McDonald Concealed Combination Bath Supply, Shower, and Drain Fittings

Diamond Line

No. E-3998-AP

Concealed bath supply, shower, and drain fitting with over rim spout, 2-inch self-cleaning shower head and arm, 1½-inch Simplex pop-up bath drain.

Valves regularly furnished 8-inch centers. Can be furnished 11-inch centers if specified.

Chromium plated brass.

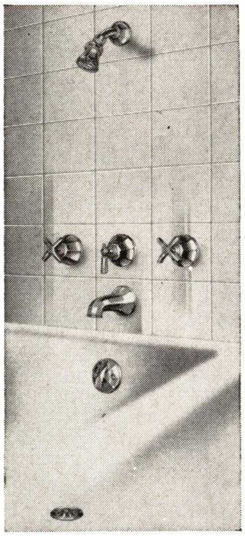
No. E-3990-AD

Same as above except with trip lever bath drain.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

McDonald Concealed Bath Supply, Shower, and Drain Fittings

Diamond Line



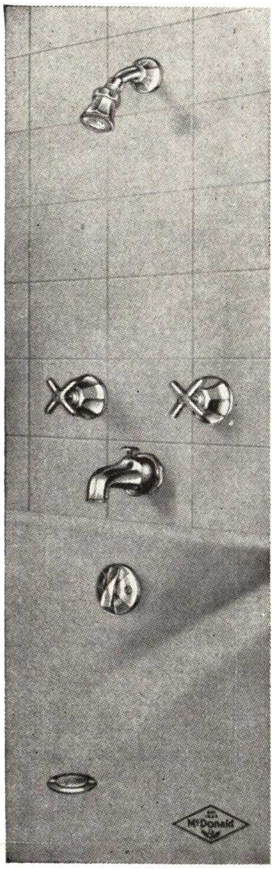
No. E-3999-AD

No. E-3999-AD. Diamond Line chromium plated concealed bath supply, shower, and drain fitting with over rim spout, 2-inch self-cleaning shower head and arm, diverter valve, and trip lever bath drain. Valves regularly furnished with 8-inch centers. Can be furnished with 11-inch centers if specified.

No. E-3999-AP. Same as above except with 1½-inch Simplex pop-up bath drain.

No. E-3999-AC. Same as above except with 1½-inch connected waste and overflow.

If desired with Metropolitan handles substitute letter M for letter A when ordering.



McDonald Concealed Combination Bath Supply, Shower, and Drain Fittings

Diamond Line

No. E-3961-AP

Concealed bath supply, shower, and drain fitting with 2-inch self-cleaning shower head and arm, diverter spout, 1½-inch Simplex pop-up bath drain.

Valves regularly furnished 8-inch centers. Can be furnished 11-inch centers if specified.

Chromium plated brass.

No. E-3961-AD

Same as above except with 1½-inch trip lever bath drain.

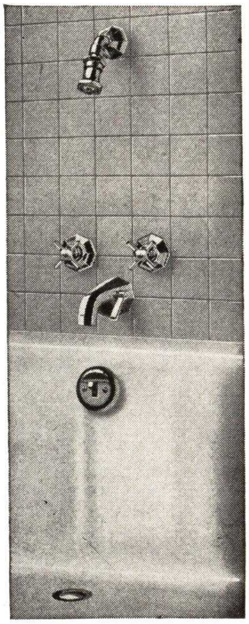
No. E-3961-AC

Same as above except with 1½-inch connected waste and overflow.

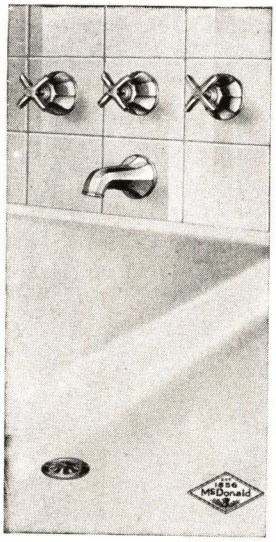
If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. 749 Chicago Quaturn Built-In Shower and Bath Fittings

Hi-Lite Trim



Chromium-plated combination built-in bath and shower fittings with overrim spout, with automatic diverter valve to shower, two ½-inch Quaturn compression supply valves, with metal handles and escutcheons, Brownie adjustable ball joint shower head, and 1½-inch pop-up drain and overflow.



No. E-3995-A McDonald Concealed Combination Bath Supply and Drain Fittings

Diamond Line

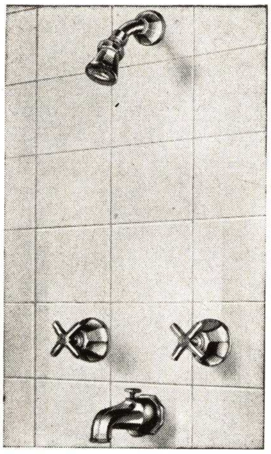
Concealed bath supply and drain fitting with over rim spout, 1½-inch sceret waste and overflow.

Valves furnished 11 inches center to center. May be furnished with 20-inch waste arm when specified.

Chromium plated brass.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. E-3961-A McDonald Concealed Combination Bath Supply and Shower Fittings



Diamond Line

Concealed bath supply and shower fittings with diverter spout, 2-inch self-cleaning shower head and arm.

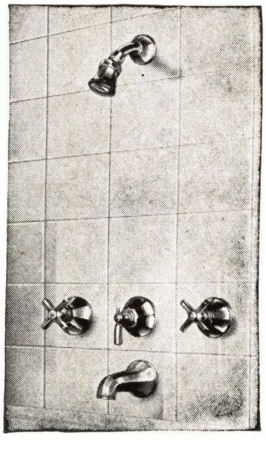
Valves regularly furnished 8-inch centers. Can be furnished 11-inch centers if specified.

Chromium plated brass.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. E-3999-A McDonald Concealed Combination Bath Supply and Shower Fittings

Diamond Line



Concealed bath supply and shower fittings with diverter valve, 2-inch self-cleaning shower head and arm.

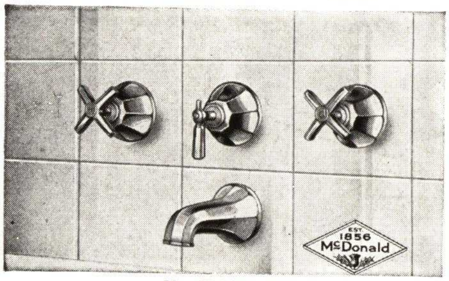
Valves regularly furnished 11-inch centers.

Chromium plated brass.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. E-3963-A McDonald Concealed Bath Supply and Drain Fittings

Diamond Line



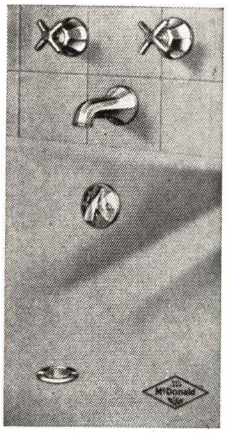
No. E-3963-A

Diamond Line chromium plated concealed diverter valve and shower fixture. Valves regularly furnished with 8-inch centers. Can be furnished with 11-inch centers if specified.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. E-3964-AP McDonald Concealed Combination Bath Supply and Drain Fittings

Diamond Line



Concealed bath supply and drain fittings with over rim spout, 1½-inch Simplex pop-up bath drain.

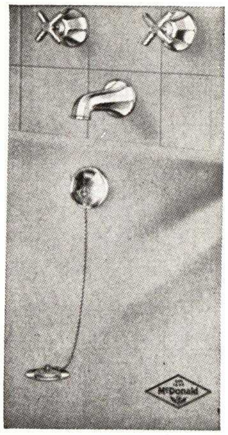
Valves regularly furnished 8-inch centers. Can be furnished 11-inch centers if specified.

Chromium plated brass.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. E-3964-AC McDonald Concealed Combination Bath Supply and Drain Fittings

Diamond Line



Concealed bath supply and drain fittings with over rim spout, 1½-inch connected waste and overflow.

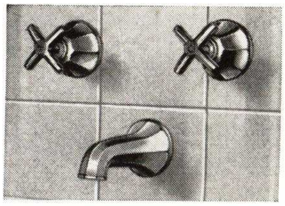
Valves regularly furnished 8-inch centers. Can be furnished 11-inch centers if specified.

Chromium plated brass.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

McDonald Concealed Over Rim Tub Fillers

Diamond Line


No. E-3964-A

No. E-3964-A

Diamond Line chromium plated concealed over rim tub filler. Valves regularly furnished with 8-inch centers. Can be furnished with 11-inch centers if specified.

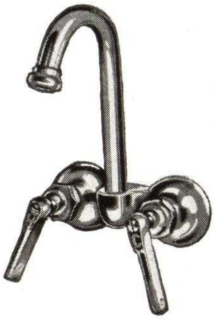
No. E-3964-AX

Same as above except furnished with corner valves instead of by-pass valves.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. E-3675 McDonald Combination Bath Faucets

Diamond Line

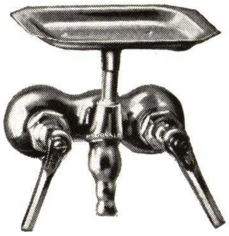


Quick compression type with diamond lever handles and code spout. Shanks are 3⅜-inches center to center. Shanks and lock nuts are for ¾-inch iron pipe.

Chromium plated brass.

No. E-3676 McDonald Combination Bath Faucets

Diamond Line

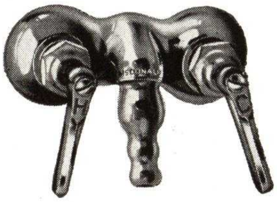


Quick compression type with diamond lever handles and soap dish. Shanks are 3⅜ inches center to center. Shanks and lock nuts are for ¾-inch iron pipe.

Chromium plated brass.

No. E-3673 McDonald Compression Double Bath Faucets

Diamond Line



Diamond Line, quick opening double bath faucet with Diamond lever handles.

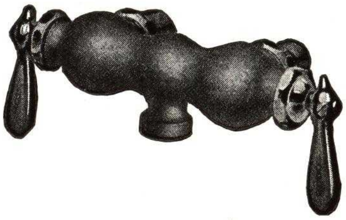
Shanks are 3⅜ inches center to center.

Shanks and lock nuts for ¾-inch iron pipe.

Colored Plumbing Fixtures

Add the charm of color to the beauty of design in today's plumbing fixtures.

Ask for information on the latest colors.

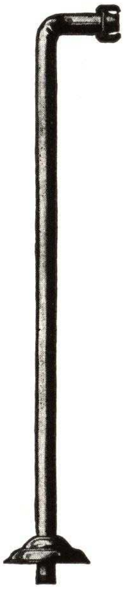


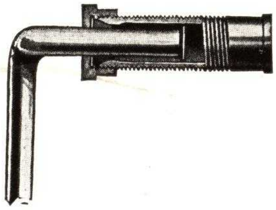
No. 78 Quaturn Compression Double Bath Faucets

Chromium plated compression double bath faucet with metal lever handles.

With locknuts only.

No. E-3932 McDonald Bath Supply Pipe





For ½-inch iron pipe at the floor. With 9/16-inch o.d. offset—annealed offset to give standard spread of 7½ inches.

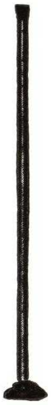
Gage, 16.

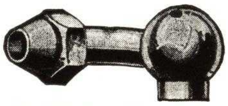
Tested at 150 pounds.

Length, 22 inches.

Nickel plated or chromium plated, as specified.

Bath Supply Pipes


No. 302

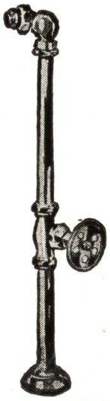

No. 314 Coupling Only

Chromium plated brass.

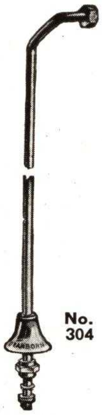
No. **302**, Plain, Threaded Both Ends, ½-Inch I.P.X. x 20½ Inches Long.......per pair .....

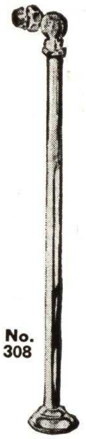
No. **313**, with Ball Offset ½-Inch and Stop, I.P.S. ....per pair .....

No. **314**, Ball Offset Coupling with Nut.........per pair .....


No. 313

Bath Supply Pipes


No. 304


No. 308

Wrapped 1 pair in a package.

No. 304

O.D., 9/16 inch. Made of soft annealed brass tubing; length, 21½ in. Ninety by 45° bends with ½-inch I.P.S. slip joint nut at bottom. Cast brass coupling and floor nuts. Furnished with lead head and deep pattern sure grip flange. Gage 16.

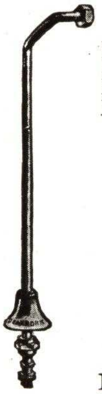
No. **304**, Nickel-Plated.per pair ....
No. **304**, Chromium-Plated ....per pair ....

No. 308—Ball Offset

I.P.S., ½ inch. With 20½-inch pipe and cast brass ball offset coupling. Furnished complete with wrought sure grip flange. Gage, 14.

No. **308**, Nickel-Plated.per pair ....
No. **308**, C. P..........per pair ....

No. 303 Bath Supply Pipes



Annealed brass tubing, 9/16-inch O. D., 16-gage, with ½-inch I. P. S. slip nut at bottom. Furnished with deep pattern sure grip escutcheons.

No. **303**, Nickel-Plated............ per pair....
No. **303**, Chromium-Plated..........per pair....

No. 316 Elbow Couplings

Iron Pipe, Male

No. **316**, Rough Nickel-Plated...... per pair....
No. **316**, Chromium-Plated......... per pair....

McDonald Bath Faucet Couplings and Coupling Nuts

Style F Coupling

Style K Coupling

Style A Coupling Nut

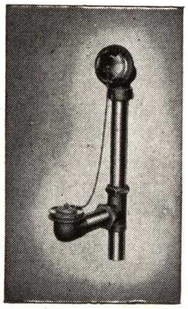
Style F. Nickel plated or chromium plated I.P. coupling. Outside thread.

Style K. Nickel plated or chromium plated ball offset coupling.

Style A. Rough chromium plated coupling nut.

No. E-3938-AM McDonald Bath Drains

Diamond Line



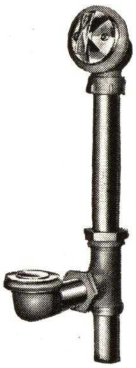
A bath drain with connected waste and overflow, 17-gage brass tubing. Regularly furnished with 1½-inch male thread and 1½-inch tubing and 1½-inch tail-piece. Can be furnished 1½-inch I.P. female if specified. Use letter F instead of M when female thread is desired.

Exposed parts chromium plated.

Can be furnished with special rubbers for use on Briggs or pressed steel tubs if desired.

No. E-3937-AM McDonald Bath Drains

Diamond Line



A Simplex trip lever pop-up type bath drain, 17-gage brass tubing. Patented.

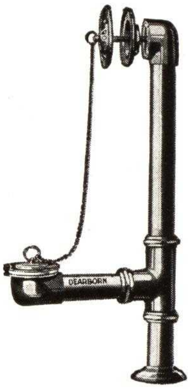
Regularly furnished with 1½-inch male thread and 1½-inch tubing and 1½-inch tail-piece. Can be furnished 1½-inch I.P. female thread if specified. Use letter F instead of M when female thread is desired.

Exposed parts chromium plated.

Can be furnished with special rubbers for use on Briggs or pressed steel tubs if desired.

Adjusto Connected Drains and Overflows

With Adjustable Overflow Head



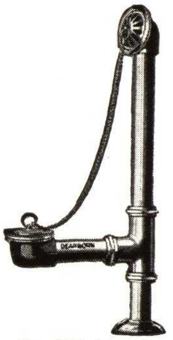
Connected drain and overflow with bead chain and rubber stopper.

All tubes are 1⅜-inch O.D.

Overflow strainer is heavy stamped brass; waste strainer is cast brass. Cast brass hexagon nuts.

	No. 202A 22-Gage Each	No. 203A 17-Gage Each
All Parts Satin Nickel...	....	....
Tube Pol. N.P., Other Parts Satin N.P.......	....	....
Tube Pol. C.P., Other Parts Satin C.P.......	....	....

Connected Bath Drains and Overflows


No. 203, Regular

No. 203 Regular

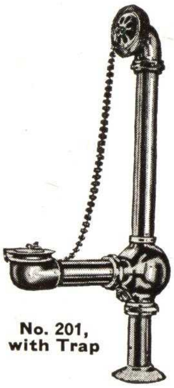
Connected drain and overflow of 17 gage, 1⅜-inch o.d. tubing with bead chain and rubber stopper.

No. **203**, N.P.ea. ....
No. **203**, C.P.ea. ....

No. 201 With Trap

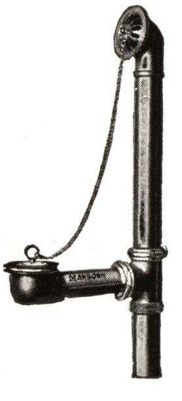
Connected drain and overflow of 17 gage, 1⅜-inch o.d. tubing with globe trap, cleanout plugs, bead chain, and rubber stopper.

No. **201**, N.P.ea. ....
No. **201**, C.P.ea. ....


No. 201, with Trap

Connected Drains and Overflows

For Built-In Tubs

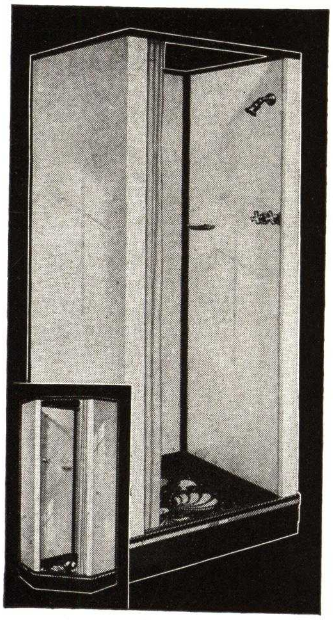


Connected drain and overflow with bead chain and rubber stopper.

Made of 17-gage brass. Heavy wrought overflow strainer, cast brass waste strainer, cast brass hexagon nuts, and ground joint lead washers. Adjustable cast brass tee with 1½-inch I.P.S. outlet and 1½-inch O.D. removable threaded tail-piece.

All parts are rough cast brass except parts inside of tub which are polished and plated.

No..........................	207	209
Nickel Plated..........each	....	....
Chrome Plated........each	....	....
Diameter.............inches	1⅜	1½



The Weisway Standard Cabinet Shower has walls of Bonderized galvanized steel, extra smooth. Standard finish, high temperature baked enamel inside and outside of all walls for either recessed or exposed installations. Corner assembly member and top frame black baked enamel finish.

Receptor of Armco iron, vitreous porcelain enameled. Exterior, jet black. Interior, jet black with textured green foot-grip, no-slip floor surface. Threshold and base frame, Armco iron, black vitreous porcelain enameled. Exterior trim mold, Bonderized galvanized steel, baked enamel to match cabinet wall color. Cast waste and strainer.

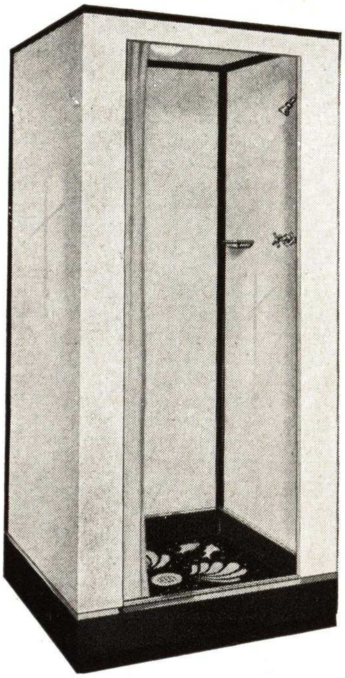
Standard equipment includes one CWX two-valve unit with adjustable, water-saver type, self-cleaning head; cast waste and strainer for 2-inch pipe, inside caulking; soap dish; curtain rod; and white duck curtain with chromium rings.

Exposed brass chromium plated.

In ordering, state whether fixture drillings are required on right or left-hand side of cabinet when facing entrance.

No.	32VR	36VR	*36VRC
Size...in.	32x32x78	36x36x78	36x36x78
Ship. Wt...lb.	235	265	250

*Corner entrance model.



The Weisway BW Master Cabinet Shower has walls of Bonderized galvanized steel. White baked enamel finish. Corner locking members and top frame are black baked enamel.

Receptor is of Armco iron, one-piece, vitreous porcelain enameled. Exterior, jet black; interior, jet black with textured green on black foot-grip, no-slip floor surface in seashell pattern.

Standard equipment includes SVP 2-valve combination unit; adjustable water-saver type self-cleaning head; cast brass waste and strainer for 2-inch pipe, inside caulking; soap dish and curtain rod.

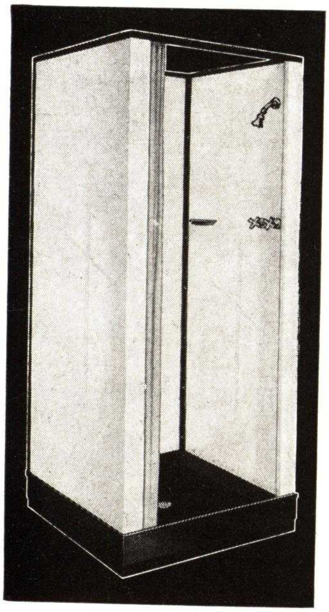
Curtain and rings, top-ceiling unit or shower door furnished at additional cost.

Exposed brass chromium-plated.

When ordering state whether fixture drillings are required on right or left-hand side of cabinet.

No.	32BW	36BW	*40BWC
Size...in.	32x32x80	36x36x80	40x40x80
Ship. Wt...lb.	310	330	390

*Corner entrance model.



No. 32CD

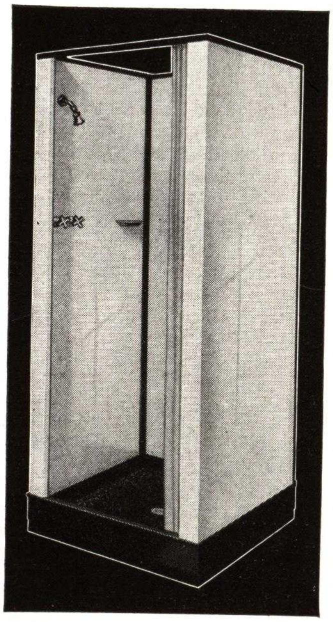
The Cottager Deluxe Cabinet Shower has walls of bonderized galvanized steel. Standard finish, white high temperature baked enamel inside and outside. Special color at extra cost. Corner members and top frame, black baked enamel.

Receptor is galvanized bonderized steel, one-piece, black enamel finish baked on at 350°F. Cast brass drain with strainer. Base frame, galvanized steel, black baked enamel finish.

Standard equipment includes CWX 2-valve combination unit; adjustable, water-saver type, self-cleaning head; cast brass drain and wrought strainer for 2-inch pipe, inside caulking; soap dish; curtain rod with white duck curtain and chromium rings. Exposed brass polished chromium plated.

When ordering, state whether fixture drillings are required on right or left-hand side of cabinet when facing entrance.

No.	32CD
Size...inches	32x32x76
Shipping Weight...pounds	180



No. 32B

The Weisway Budgeteer Cabinet Shower has walls of Bonderized galvanized steel. Standard finish white high temperature baked enamel inside and outside. Special colors at extra cost. Corner members and top frame, black baked enamel.

Receptor is of Armco iron, one-piece, vitreous porcelain enameled. Exterior, jet black; interior, textured green on black with foot-grip, no-slip floor surface. Threshold, black vitreous porcelain enameled.

Standard equipment includes CWX 2-valve combination unit; adjustable, water-saver type, self-cleaning head; cast brass waste and strainer for 2-inch pipe, inside caulking; soap dish; curtain rod with white duck curtain and chromium rings.

Exposed brass polished chromium plated.

When ordering, state whether fixture drillings are required on right or left-hand side of cabinet when facing entrance.

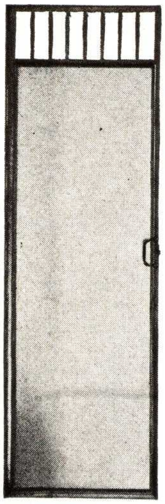
No.	32B	36B	*36BC
Size...in.	32x32x76	36x36x76	36x36x76
Ship. Wt...lb.	195	255	255

*Corner entrance model.

Fiat Senior Shower Doors

For installation on marble, tile or structural glass showers.

Construction features are as follows. Heavy brass seamless tubing frame, ¾x¾ and ⅜x⅜ inches, with extruded brass mouldings. Extruded brass jamb has an adjustment of 3/16 inch each way, a total of ⅜ inch to take up irregularities in the opening on which it is installed. Specially constructed, leak-proof continuous brass piano hinge.

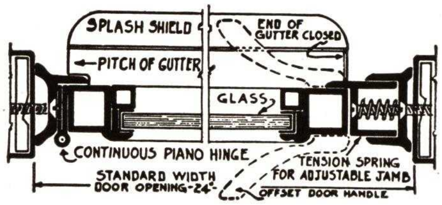


Double acting friction lock, guaranteed against door binding. Clear or obscure glass is set into a heavy rubber U channel, held in place and fitted into heavy extruded brass mouldings. Special off-set design handles on both sides of the door. Water deflector is made of 18-gage brass with gutter to prevent water from dripping onto the floor when the door is opened. Grille vent has 7 bars, 7 inches high, of ⅜x⅜-inch seamless brass tubing. Heavy chromium plated finish.

When ordering state the hinging desired (right or left as door is faced) and whether for marble, tile or structural glass showers.

Size........................inches	24x72
Shipping Weight..........pounds	.....

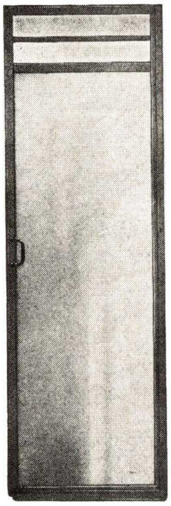
Additional charge for special sizes.



Fiat Zephyr Shower Doors

For installation on tile or structural glass showers.

Construction features are as follows. One-piece extruded aluminum alloy frame. Extruded aluminum alloy jamb. Specially constructed, leakproof continuous aluminum piano hinge. Two bullet locks, guaranteed against door binding. Clear or obscure glass, set into a heavy rubber U channel. Special off-set design handles on both sides of the door.



With Grille

Water deflector is made of extruded aluminum with gutter to prevent water from dripping into the floor when the door is opened. Vent is horizontal solid aluminum towel bar.

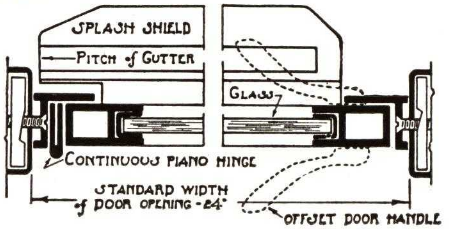
Anodized finish.

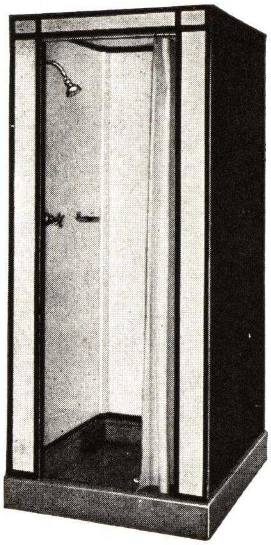
When ordering state the hinging desired (right or left as door is faced) and whether for marble, tile or structural glass showers.

	*Without Grille	With Grille
Size...............inches	24x64	24x72
Shipping Weight..pounds	50	75

*Low type door.

Additional charge for special sizes.





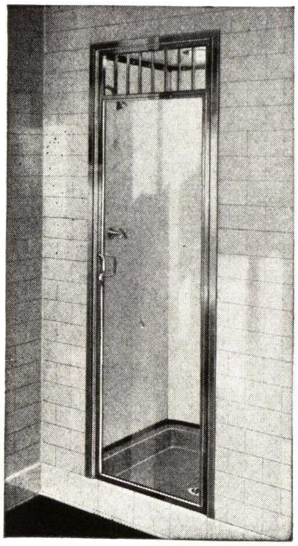
No. 2-A Fiat Admiral Shower Cabinets

Walls and top finished in porcelain enamel; pre-cast terrazzo receptor in regular, corner and extended types.

Exterior surfaces, except front, regularly finished in rough vitreous enamel ground coat. When ordering, state which side, if any, should be finished same as interior.

Furnished complete with chromium plated valves and head; soap dish.

Curtain extra.



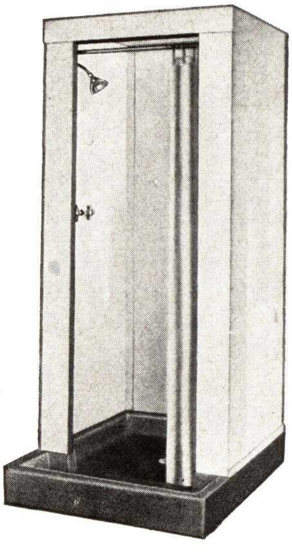
No. 4-B Fiat Admiral Shower Cabinets

Interior walls and top finished in porcelain enamel; pre-cast terrazzo receptor.

Special extruded door frames of either brass or aluminum for recess installation.

Furnished complete with chromium plated valves and head; soap dish.

Door extra.

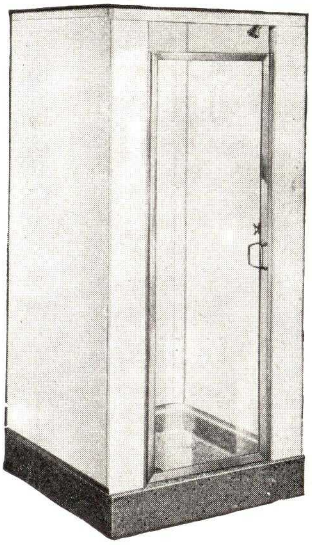


No. 6 Fiat Ensign Shower Cabinets

Walls and top finished inside and out in baked-on enamel; pre-cast terrazzo receptor in regular, corner and extended types.

Furnished complete with chromium plated valves and head; soap dish.

Curtain extra.



No. 15 Fiat Marine Shower Cabinets

With Zephyr Door

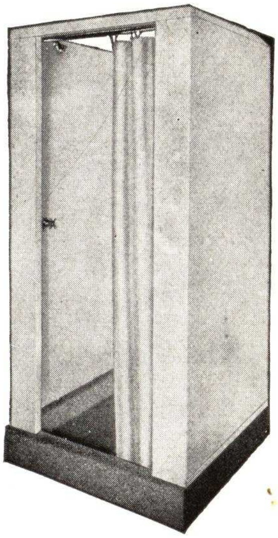
Walls finished inside and out in baked-on enamel; pre-cast Art-tex receptor in regular, corner and extended types.

Hollow metal door stile construction.

Furnished complete with chromium plated valves and head; and soap dish.

Door frame of extruded aluminum; continuous aluminum piano hinge, extruded aluminum water deflector and drip gutter, special off-set design door handles. All metal parts in anodized satin finish.

Shower door is extra and not included as standard equipment.



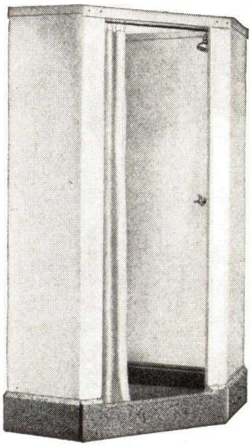
No. 15 Fiat Marine Shower Cabinets

Walls finished inside and out in baked-on enamel; pre-cast Art-tex receptor in regular, corner and extended types.

Hollow metal door stile construction.

Furnished complete with chromium plated valves and head; soap dish, chromium plated curtain rod and curtain.

No. 16 Fiat Marine Shower Cabinets

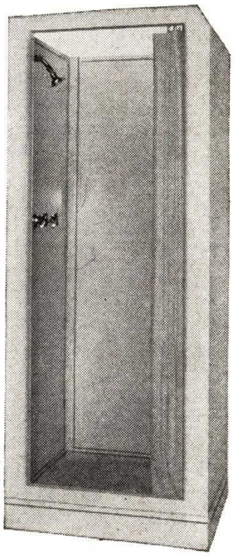


Walls finished inside and out in baked-on enamel; pre-cast art-tex receptor is regular, corner and extended types.

Hollow metal door stile construction.

Furnished complete with chromium plated valves and head; soap dish, chromium plated curtain rod and curtain.

No. 17-R Fiat Cadet Shower Cabinets



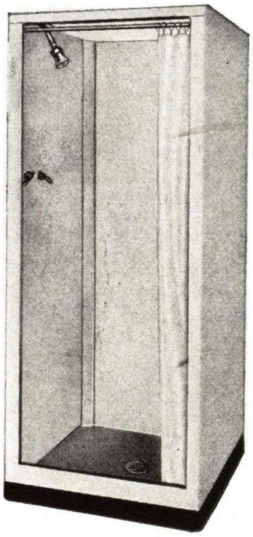
Sizes, 32x32x80 inches and 36x36x80 inches.

Walls are bonderized, galvanized steel finished inside and out in white synthetic enamel.

Receptor available made of artex; black marble chips with gray cement; or made of terrazzo, black and white marble chips with white cement.

Furnished with individual compression valves with arm and shower head; white duck curtain and rod.

No. 18-R Fiat Skipper Shower Cabinets



Size, 32x32x76 inches.

Walls are bonderized, galvanized steel finished inside and out with white baked-on synthetic enamel.

Receptor is semi-flat standard type Stonetex; slip-proof, leak-proof and non-absorbent.

Brass drain for 2-inch waste connection cast integral with receptor.

Furnished with combination hot and cold compression valves with shower head and arm; curtain rod and curtain.

Fiat Shower Cabinet Sizes

Regular Receptor

Skipper Type, In.			Cadet Type, In.			Marine and Ensign Type, In.			Admiral Type, In.		
Wdth.	Depth	Ht.	Wdth.	Depth	Ht.	Wdth.	Depth	Ht.	Wdth.	Depth	Ht.
32	32	76	**32**	32	80	**32**	32	80	**32**	32	80
..	..	..	**36**	36	80	**36**	36	80	**36**	36	80
..	..	..	***36**	36	80	***40**	40	80	**40**	36	80
..	..	..	..	..	..	..	..	..	**36**	40	80
..	..	..	..	..	..	..	..	..	***40**	40	80

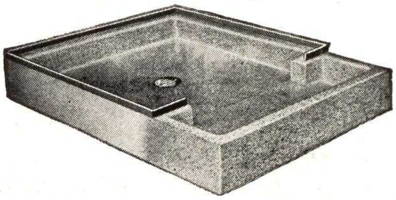
*Corner type.

When Ordering

please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.

Fiat Pre-Cast Receptors

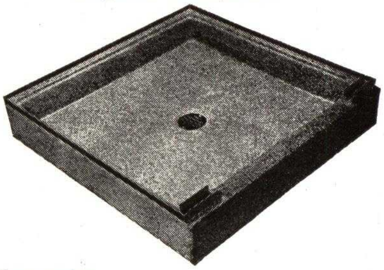
Extended Receptors



The extended type receptor is available in certain sizes on all models except Skipper and Cadet.

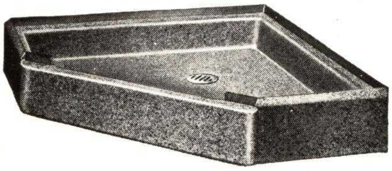
Designed to remove all possibility of water splashing from the receptor on to the floor of the room. It also affords one a convenient place to stand either before or after the shower. Sizes, 32x44, 36x42, 42x48 inches.

Regular Receptors



On a regular receptor drain is always located in center except when only one side of receptor has a deluxe shoulder. In that case drain is located at what would be the center if receptor had no deluxe shoulder. The ⅝-inch shoulder is added to dimensions of receptor. Sizes, 32x32, 34x34, 36x36, 36x40, 40x36 inches.

Corner Receptors

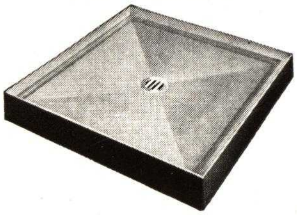


Size.................in.	36x36	42x42
Lgth. Along Either Side Wall.............in.	36⅞	42⅞
Side Wall to Corner of Threshold.........in.	14 5/16	19 5/16
Width of Threshold.in.	31½	33½
Ctr. of Outlet to Either Side Wall........in.	13½	16½

Special Receptors

A special receptor of any kind or size can be furnished upon receipt of complete details of requirements of particular installation for which the receptor is to be used.

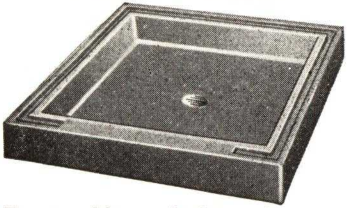
Flat Receptors



Used with Skipper shower cabinet. Terrazzo and Art-Tex types used in conjunction with tile shower walls.

Sizes, 32x32, 36x36, 42x42 inches.

Rabbeted Receptors



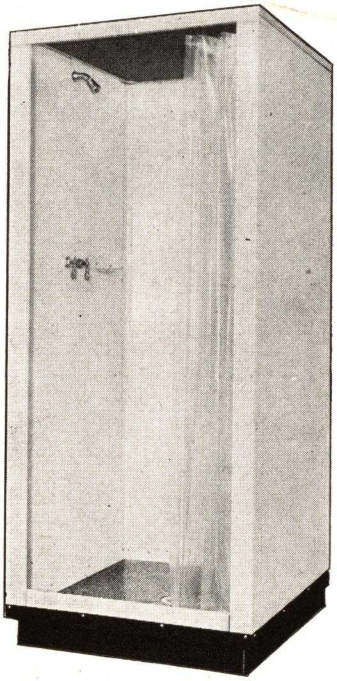
For marble and slate shower enclosure wall construction. Receptor is rabbeted so that the slate or marble walls can be set in receptor body and cemented in.

Sizes 32x32, 36x36, 42x42, 72x36 inches.

Compositions

Terrazzo—Black and white marble chips (Nos. 0 and 1), white portland cement. **Art-Tex**—Black Marble chips (No. 1), white and gray portland cement.

No. 45 Tiletone Shower Cabinets

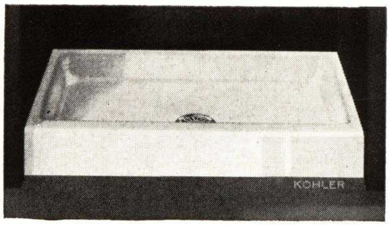


Shower Compartment: Walls are ⅛-inch thick, pressed, treated fiber-board, pre-fitted and drilled for easy assembly. One side panel is drilled for fixtures and is interchangeable for right or left-hand installation of plumbing. The steel front frame is one unit consisting of front corner posts, lintel, and threshold firmly welded together. The steel top frame with curtain rod permanently fastened is a one-unit welded band which slips over the walls and holds them securely. All parts finished in lustrous white, synthetic baked enamel.

Receptor: Finished in sanitary non-skid black porcelain enamel. Formed of heavy gage steel and securely fabricated to receive front frame, corner posts, walls and drain for 2-inch waste pipe.

Fittings: Lever handle, compression valves for hot and cold water, adjustable directional shower head, and drain are machined of cast brass, finished in chrome plate. Zinc plated soap dish, white shower curtain with snap hooks and cadmium plated nuts, bolts and washers are standard equipment.

Size, 32x32x75 in. Approximate shipping weight, 125 lb.



Cataract Recess Receptor with strainer for calking 2-inch iron pipe or lead pipe connection.

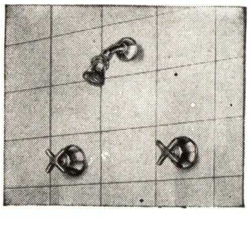
No. K-1140

Size Overall........................	inches	36¾x36	40x40
Width Between Walls............	inches	34¼	38¼
Front to Rear Wall..............	inches	35⅞	40⅛
Depth Inside......................	inches	4	4
Approx. Ship. Weight...........	pounds	176	211

Furnished in regular white and acid resisting white or colored enamel.

No. E-3991-A McDonald Concealed Shower Fittings

Diamond Line

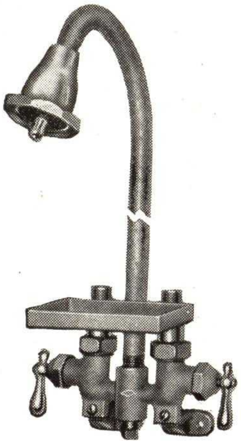


Concealed shower fittings with 2-inch self-cleaning shower head and arm. Valves regularly furnished 8-inch centers. Can be furnished 11-inch centers if specified.

Chromium plated brass.

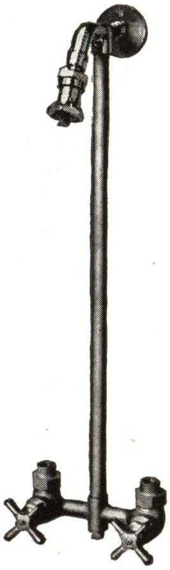
If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. E-3504 McDonald Industrial Shower Fittings



Gooseneck measures 24 inches from valve to connection of shower head. Ground joint unions for ½ inch iron pipe. Rough nickel plated brass.

No. 752 Chicago Exposed 2-Valve Showers



With slow compression units, four-arm metal handles, Brownie ball-joint shower head with top wall flange, 24-inch full ½-inch I.P.S. brass pipe shower riser. Center to center of supplies, 6 inches.

Also furnished to order for supplies greater than 6 inches center to center.

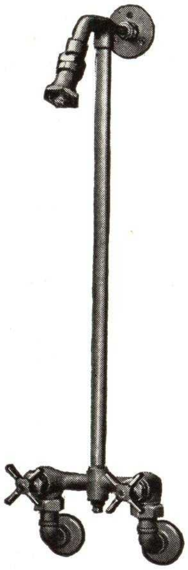
Drain plug permits complete drainage when desired.

Can be used with supplies from wall, ceiling, or floor.

No. **752**, Rough Nickel Plated...ea. ....

No. **752**, Polished Chromium Plated ....each ....

No. 755 Chicago Esposed 2-Valve Showers



With slow compression units, four-arm metal handles, Brownie ball-joint shower head with top wall flange, 24-inch full ½-inch I.P.S. brass pipe shower riser. Center to center of supplies, 6 inches.

Also furnished to order for supplies greater than 6 inches center to center.

Drain plug permits complete drainage when desired.

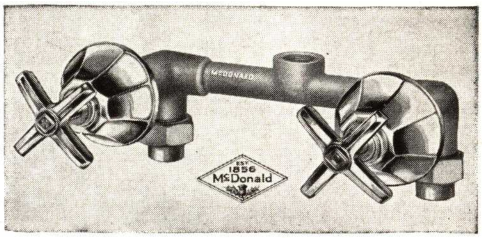
With ells and flanges for supply from wall.

No. **755**, Rough Nickel Plated.each ....

No. **755**, Polished Chromium Plated......................each ....

No. E-3965-A McDonald Concealed Combination Shower Valves

Diamond Line



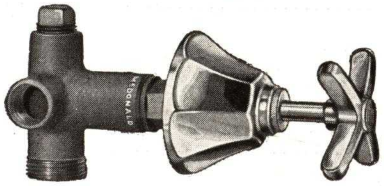
Concealed combination shower valves with ½-inch I.P.S. half-union couplings on inlets. Regularly furnished 8-inch centers. Can be furnished 11-inch centers, if specified.

Chromium plated brass.

If desired with Metropolitan handles, substitute letter M for letter A when ordering.

No. E-3966-A McDonald Concealed Bath or Shower By-Pass Valves

Diamond Line

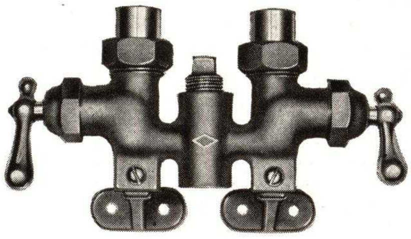


Chromium plated brass. Iron pipe size, ½-inch.

Can be furnished with fully chromium plated center pieces and sliding escutcheons when specified. Also available without by-pass.

If desired with Metropolitan handle, substitute letter M for letter A when ordering.

No. E-3505-L McDonald Industrial Shower Valves



Designed for supply top or bottom. Ground joint unions tapped for ½-inch iron pipe.

Rough nickel plated brass.

No. 1422 Curtain Rod Flanges

Polished chromium.

Adjustable heavy cast brass flange with set and wood screws.

Packed 1 pair in a box, 150 boxes in a carton.

No. **1422**, Slips Rod Size, $^{15}/_{16}$-Inch O.D..........each ....
No. **1422**, Slips Rod Size, 1-Inch O.D............each ....

Powers Safety Shower Mixers

Style A

Style C

Has a pressure equalizing valve which automatically equalizes the pressures of hot and cold water before they enter the mixing chamber, thus preventing scalding due to fluctuating pressures in the supply lines.

A safety stop screw (concealed) is provided by which the movement of the valve is definitely limited, so that it is impossible to get a dangerous water temperature.

Inlets are provided with built-in check valves.

Made entirely of bronze with chromium-plated dials and handles.

Style A—For Exposed Piping

Size........inches	½	¾
Style A........each	**$40.00**	**$80.00**
Wall Flange........each	**3.00**	**6.00**

Style C—For Concealed Piping

Not Accessible from Rear

Size........inches	½	¾
Style C........each	**$47.00**	**100.00**

Style D Powers Shower Mixers

For Mixing Steam and Water

An efficient mixer for shower baths, wash sinks and industrial processes, supplied with steam and cold water. Mixes perfectly, and is safe against scalding. Steam at pressures from 10to 100 pounds may be used.

Water and steam inlets are provided with check valves. Noiseless in operation.

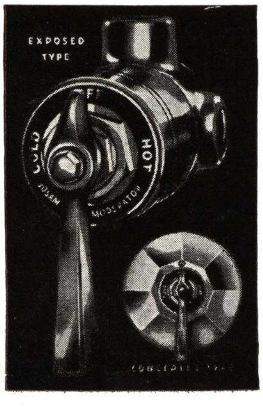
Changes of pressure in the supply lines are equalized by a simple pressure equalizing valve, and a concealed safety stop screw is provided by which the temperature of the shower can be definitely limited, making it impossible to get a scalding water temperature.

Made of bronze with internal parts chromium-plated.

Always state steam and water pressure when ordering.

Size........inches	½	¾
Style D........each	**$50.00**	**$100.00**
Wall Flange, Add........	**3.00**	**6.00**

Josam Moderator Shower Mixing Valves



A single moving part moderates the water temperature and prevents accidental scalding. Hydraulically operated shuttle valve shuts off hot water instantly if cold water fails. All working parts in a single unit.

Series **1420-11**H, Concealed Type, All Bronze with Polished Chrome Plated Top and Escutcheon...ea.	**$24.00**
Series **1430**-HH, Exposed Type, All Bronze with Polished Chrome Plated Body......ea.	**23.00**

Powers Thermostatic Water Controllers

Nos. C-20, C-30, C-40,C-60

Nos. C-100 and C-125

Scalding water cannot pass through this controller. Failure of the cold water supply will instantly shut off the delivery. Hot and cold water should always come from the same original source or at least be under approximately the same pressure. This pressure for best results should not be more than 60 pounds and never over 100 pounds.

Controllers for all shower bath equipment, unless otherwise specified, are given a maximum limit of 115°. Mixers desired for hot water line control should be so specified and will be set to deliver at a maximum of 135°.

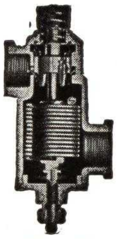
Removable key adjustment lock will be supplied when desired at an additional price. No thermometers, stop valves or other auxiliary fittings are regularly furnished.

Body is of bronze.

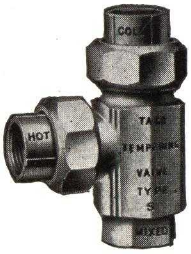
No.........	C-**20**	C-**30**	C-**40**	C-**60**	C-**100**	C-**125**
Rough Bronze...ea.	**$90.00**	**100.00**	**135.00**	**145.00**	**155.00**	**210.00**
C.P........ea.	**$100.00**	**115.00**	**150.00**	**160.00**	**170.00**	**225.00**
No. Shower Heads......	1–4	4–6	6–10	10–14	14–20	20–25
*GPM........	22	34	53	67	100	125
Inlets......in.	½	¾	1	1¼	1¼	1½
Outlets....in.	¾	1	1¼	1½	1½	2
Ship. Wt...lb.	35	40	45	100	100	105

*Capacities based on 45 pounds of water pressure.

Taco Tempering Valves



Type T



Type S

Designed to proportion accurately both hot and cold water entering valve so that required outlet temperature will remain constant thermostatically. A temperature range from 135° to 200°F. can be obtained, with reasonable accuracy. Valve body is a heavy bronze casting; thermostatic element is entirely of brass, bronze and copper. By turning adjustment stem on bottom of valve, outlet temperature can be lowered or raised.

Should be installed so that there is equal pressure on both sides of valve. Thoroughly tested for accuracy and to a working pressure of 125 pounds.

Size..........inches	S-½	S-¾	T-1	T-1½	T-2
Each..................	**$6.99**	**7.49**	**28.00**	**56.00**	**80.00**
Length...........inches	4⅝	4⅝	8⅜	9$\frac{1}{16}$	9$\frac{7}{16}$
Ship. Weight.....pounds	2½	2½	7	10	13

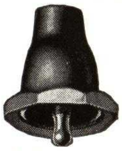
Brownie No-Drip Shower Heads

Self-Cleansing

Simply turn knob to flush. Water cuts off sharply. Ball joint is easy to move; does not leak.

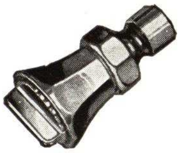
		C. P.
No. **620**-B, with Ball Joint.....each		....
No. **620**-C, less Ball Joint......each		....

McDonald Shower Heads



No. E-3502, 2-inch. Rough brass or rough nickel plated.
No. E-3502-4, 4-inch. Rough brass or rough nickel plated.

No. E-647½-A McDonald Shower Heads



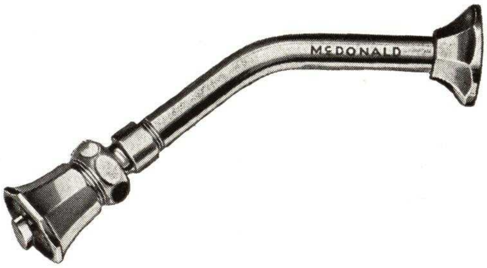
A self-cleaning shower head with integral ball joint.

Diameter, 2 inches.

Female iron pipe thread, ½-inch.

Chromium plated brass.

No. E-649½-A McDonald Shower Heads and Arms

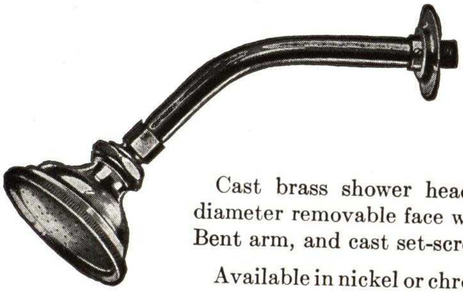


A 2-inch self-cleaning adjustable ball joint shower head and arm with set-screw flange.

Chromium plated brass.

No. 904 Cast Brass Shower Head and Arm

Ball Joint

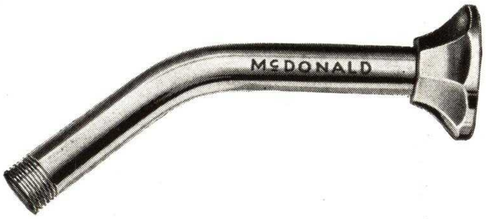


Cast brass shower head with 4-inch diameter removable face with ball joint. Bent arm, and cast set-screw flange.

Available in nickel or chromium plated.

Packed complete, 1 set in a box.

No. E-646-A McDonald Bent Shower Arms



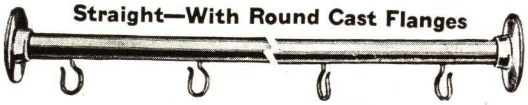
A bent shower arm and escutcheon. Made of ½-inch brass pipe, 9 inches long.

Chromium plated brass.

Traxrod Brass Shower Curtain Rods

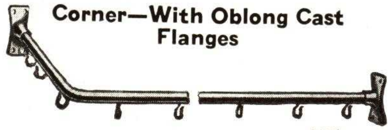
O.D., 1 inch; gage, 20.

Straight—With Round Cast Flanges



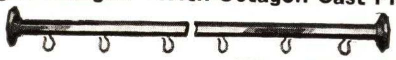
No.	900	901	902	903
Length, feet	3½	5	5½	6
Chromium Plated, each	....	....	....	....
No. of Hooks	8	12	13	14

Corner—With Oblong Cast Flanges



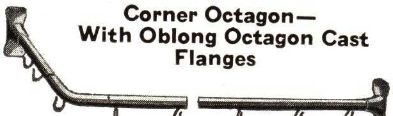
No.	905	906	907
Length, feet	5	5½	6
Chromium Plated, each	....	....	....
No. of Hooks	17	18	19

Straight Octagon—With Octagon Cast Flanges



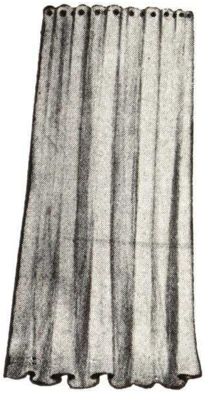
No.	908	909	910	911
Length, feet	3½	5	5½	6
Chromium Plated, each	....	....	....	....
No. of Hooks	8	12	13	14

Corner Octagon—With Oblong Octagon Cast Flanges



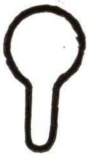
No.	919	920	921
Length, feet	5	5½	6
Chromium Plated, each	....	....	....
No. of Hooks	17	18	19

No. 10900 White Duck Shower Curtains



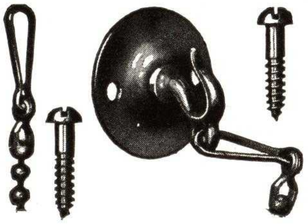
No.	Each	Fixture Size Ft.	Curtain, Inches Width	Curtain, Inches Length
For Shower Stalls				
1	.....	2½	36	72
2	.....	3	42	72
3	.....	3½	48	..
4	.....	4	54	..
For Recess Baths				
5	.....	4½	60	72
6	.....	5	66	72
7	.....	5½	72	72
8	.....	6	78	72
For Corner Baths				
9	.....	4½	84	72
10	.....	5	90	72
11	.....	5½	96	72
12	.....	6	102	72
13	.....	42x27-inch	72	72
14	.....	57x28-inch	99	72

No. 909 Shower Curtain Pins



Packed 100 in a box.

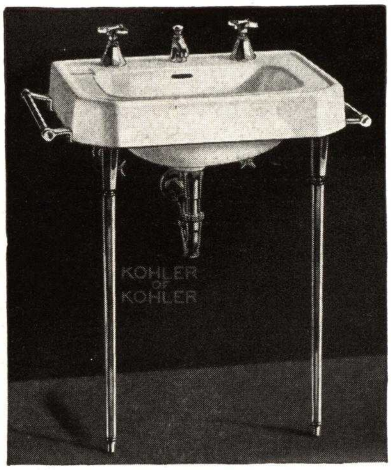
No. **909**, Nickel-Plated	per 100	....
No. **909**, Chromium-Plated	per 100	....



No. 910 Shower Curtain Hooks

Hold back curtain hook complete with chain and screws.

No. **910**, Nickel-Plated	each	....
No. **910**, Chromium-Plated	each	....



No. K-1770-F

Jamestown Vitreous China Lavatory with rectangular bowl, anti-splash rim, rear outlet, and open overflow. Supported on painted wall brackets and metal legs.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable seats, cross handles, raised spout, drain knob, and towel bars.

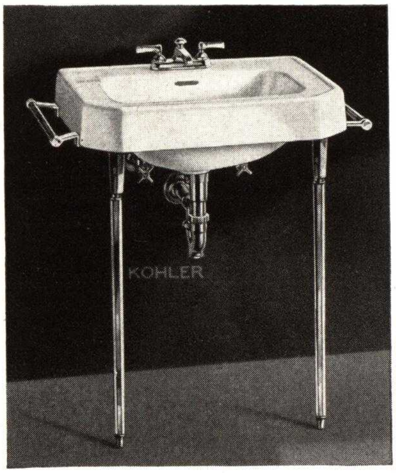
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size............inches	20x18	24x20	27x22
Bowl....................inches	14½x10½	16x12	17x13
Height from Floor.......inches	31	31	31
Approximate Shipping Weight, less Fittings...........pounds	70	81	101

Furnished in white or colors.



No. K-1775-C

Jamestown Vitreous China Lavatory with rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on wall brackets and metal legs.

Fittings, all-metal combination supply and pop-up drain fitting with renewable units and lever handles; raised spout; drain knob; two towel bars.

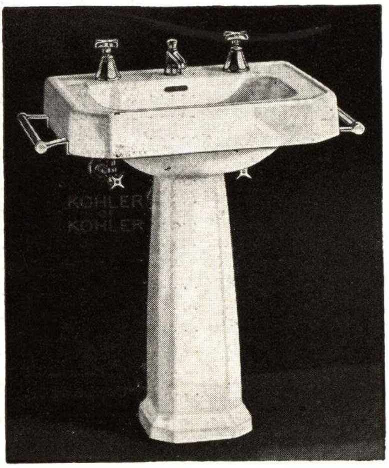
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size............inches	20x18	24x20	27x22
Bowl....................inches	14½x10½	16x12	17x13
Height from Floor.......inches	31	31	31
Approx. Ship. Wt., less Ftgs. Lbs.	67	68	91

Furnished in white or colors.



No. K-1780-F

Jamestown Vitreous China Lavatory with rectangular bowl, anti-splash rim, rear outlet, and open overflow. Supported on vitreous china pedestal.

Fittings, all-metal compression valves with renewable seats, cross handles, raised spout; pop-up drain fitting and drain knob.

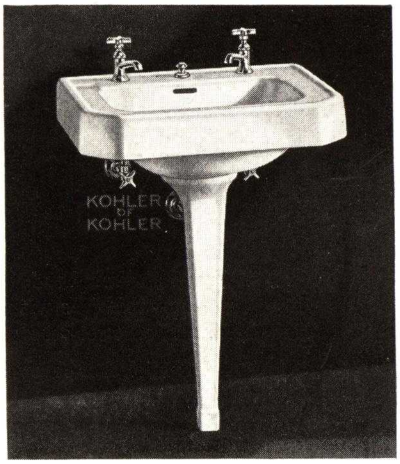
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size.....................inches	24x20	27x22
Bowl.............................inches	16x12	17x13
Height from Floor................inches	31	31
Approximate Shipping Wt., less Fittings..........................pounds	120	140

Furnished in white or colors.



No. K-1790-J

Jamestown Vitreous China Lavatory with rectangular bowl, anti-splash rim, rear outlet, and open overflow. Supported on vitreous china leg and metal wall brackets.

Fittings, all-metal compression faucets with renewable seats, cross handles, raised spout; pop-up drain fitting and drain knob.

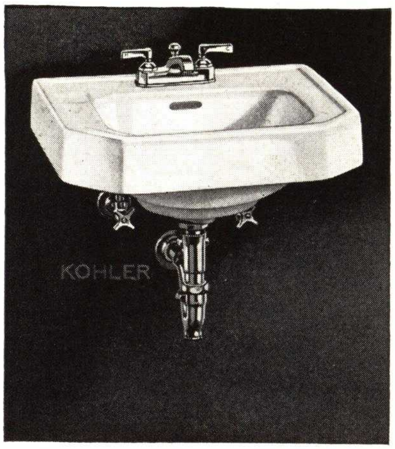
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size..............inches	20x18	24x20	27x22
Bowl......................inches	14½x10½	16x12	17x13
Height from Floor.........inches	31	31	31
Approximate Shipping Weight, less Fittings..............pounds	75	81	100

Furnished in white or colors.



No. K-1797-C

Jamestown Vitreous China Lavatory with rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall brakcets.

FITTINGS: All-metal combination supply and pop-up drain fitting with renewable units and lever handles, raised spout, drain knob, and 1¼-inch tailpiece.

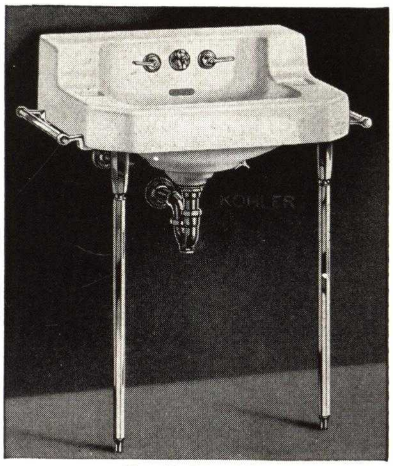
SUPPLY PIPES: ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

TRAP: 1¼-inch P pattern with metal wall flange.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14½x10½	16x12
Height from Floor	inches	31	31
Approx. Ship. Wt., less Ftgs.	pounds	76	79

Furnished in white or colors.



No. K-1860-BA

Gramercy Vitreous China Lavatory with shelf back, rectangular bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hangers and metal legs.

FITTINGS: All-metal combination supply and pop-up drain fitting with compression valves, renewable seats, lever handles, drain knob, and two towel bars.

SUPPLY PIPES: Flexible, ⅜-inch I.P. size to wall with stops.

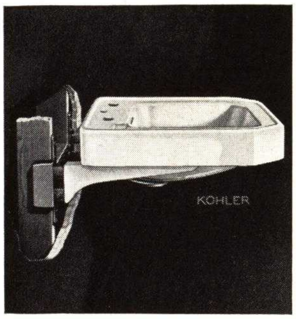
TRAP: 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	19x17	22x18	24x20	27x22
Bowl	inches	14x11	15x11½	16x12¾	18x14½
Width of Shelf	inches	4½	4½	5	5¼
Height of Back	inches	4	4	4	4
Height from Floor	in.	31	31	31	31
Approx. Ship. Wt., less Fittings	pounds	69	75	97	112

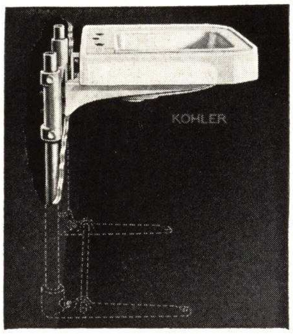
Furnished in white or colors.

Wall Supports and Chair Carriers

With Enameled Exposed Brackets For Vitreous China Lavatories



Ancora, Nos. K-1806 and K-1807



Secura, Nos. K-1812 and K-1813

Ancora

No. K-1806—Lavatory wall support with enameled exposed brackets for lavatories without back.

No. K-1807—Lavatory wall support with concealed wall hanger for lavatories with back.

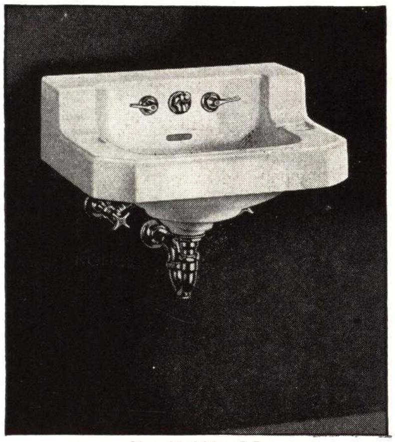
Secura

No. K-1812—Lavatory chair carrier with enameled exposed bracket for lavatories with or without back.

No. K-1813—Lavatory chair carrier with concealed wall hanger for lavatories with back.

Specify size of lavatory when ordering wall supports or chair carriers.

Ancora wall supports furnished only for 24x20 inch or smaller lavatories. Bolts and spacer sleeves regularly furnished for walls up to 1-inch thickness. When thickness of wall exceeds 1 inch, give distance from face of wall support or chair carrier to finished wall when ordering.



No. K-1865-BA

Gramercy Vitreous China Lavatory with shelf back, rectangular bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hangers.

FITTINGS: All-metal combination supply and pop-up drain fitting with compression valves, renewable seats, lever handles, and drain knob.

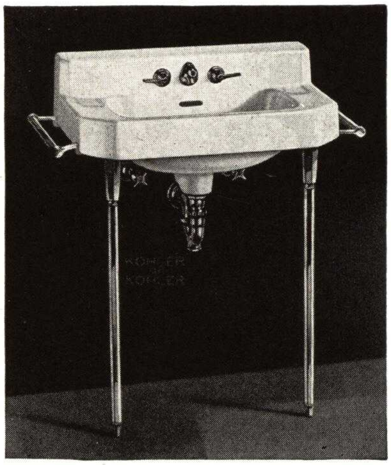
SUPPLY PIPES: ⅜-inch I.P. size to wall with annealed vertical tubes, angle stops, metal cross handles, and escutcheons.

TRAP: 1¼-inch P pattern with metal wall flange.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	19x17	22x18	24x20
Bowl	inches	14x11	15x11½	16x12¾
Width of Shelf	inches	4¼	4½	5
Height of Back	inches	4	4	4
Approx. Ship. Wt., less Fittings	lb.	62	70	84

Furnished in white or colors.



No. K-1870-BA

Strand Vitreous China Lavatory with shelf back, rectangular bowl, anti-splash rim, rear outlet, and open overflow. Supported on concealed wall hangers and metal legs.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable seats, lever handles, drain knob, and towel bars.

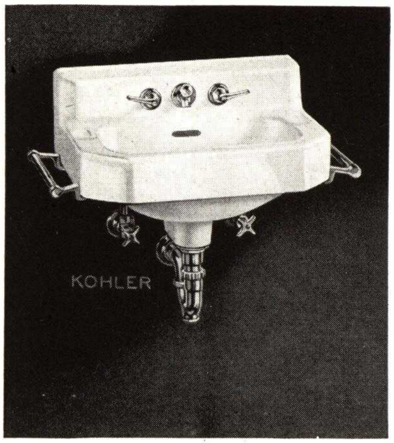
Supply pipes, flexible, ⅜-inch I.P. size to wall with angle stops, metal handles and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x14	26x15½
Bowl	inches	15x9	17½x10
Width of Shelf	inches	4	4¼
Height of Back	inches	3½	3½
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	65	84

Furnished in white or colors.



No. K-1875-BA

Strand Vitreous China Lavatory with shelf back, rectangular bowl, anti-splash rim, rear outlet, and open overflow. Supported on concealed wall hangers.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable seats, and lever handles; drain knob; two towel bars.

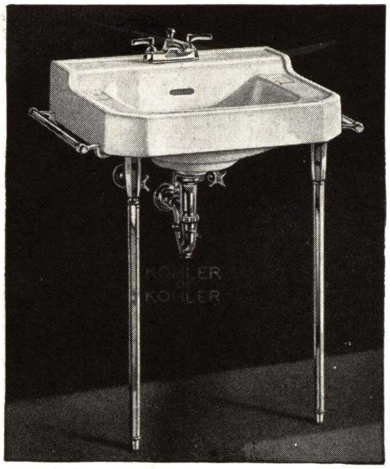
Supply pipes, ⅜-inch I.P. size to wall with annealed vertical tubes, angle stops, and metal cross handles.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x14	26x15½
Bowl	inches	15x9	17½x10
Width of Shelf	inches	4	4¼
Height of Back	inches	3½	3½
Approx. Ship. Wt., less Fittings	pounds	59	75

Also available with self-closing valves or three-water fittings at added cost. Furnished in white or colors.



No. K-1910-C, with Legs
*No. K-1915-C, less Legs

Chesapeake Vitreous China Lavatory with ledge back, rectangular bowl, anti-splash rim, rear outlet, open overflow, two cast-in soap dishes, wall hangers, and metal legs.

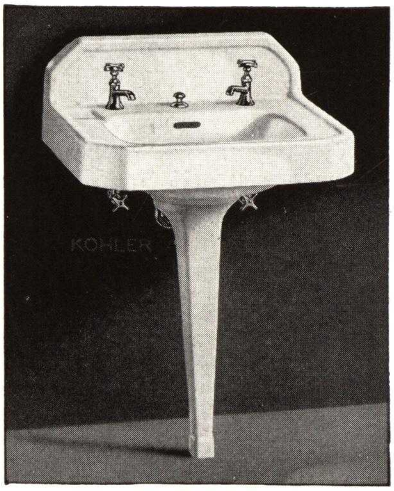
Fittings: Combination supply and pop-up drain fitting with compression valves, renewable units, lever handles, raised spout, drain knob, and two towel bars.

Supply Pipes: ⅜-inch I.P. size to wall with angle stops.

Trap: 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	†18x15	†20x18	24x20	30x22
Bowl	inches	14x9	14½x10½	16x12	18x14
Width of Ledge	inches	4	5¼	5½	6
Height of Back on Ledge	inches	1½	1½	1½	1½
Height from Floor	inches	31	31	31	31
Approx. Ship. Wt., less Ftgs.	lb.	52	57	74	78

*Furnished in 18x15 and 20x18-inch sizes only.
†Has one cast-in soap dish.



No. K-1945-J

Greenwich Vitreous China Lavatory with back, rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on vitreous china leg and concealed wall hangers.

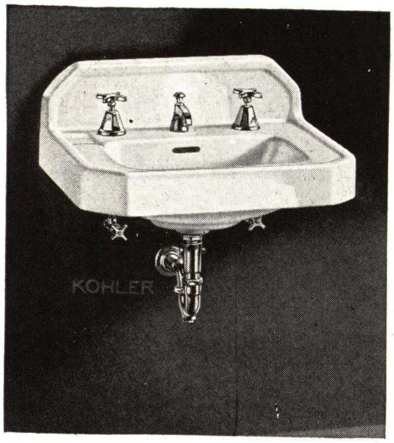
Fittings: Compression faucets with metal cross handles and renewable seats; pop-up drain with metal knob and 1¼-inch tail piece.

Supply Pipes: ⅜-inch I.P. size to wall with angle stops.

Trap: 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10	16x11½
Height of Back	inches	6	6
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	77	91

Furnished in white or colors.



No. K-1950-F

Greenwich Vitreous China Lavatory with back, rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hangers.

Fittings: All-metal combination supply and pop-up drain fitting with compression valves, renewable seats, escutcheons, cross handles, raised spout, drain knob, and 1¼-inch tail piece.

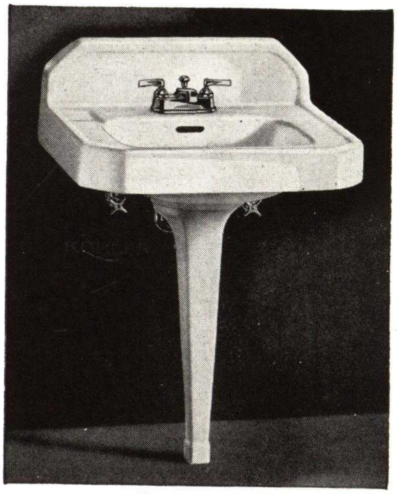
Supply Pipes: ⅜-inch I.P. size to wall with angle stops.

Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10	16x11½
Height of Back	inches	6	6
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	64	84

Furnished in white or colors.



No. K-1940-C

Greenwich Vitreous China Lavatory with back, rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on vitreous china leg and concealed wall hangers.

Fittings: All-metal combination supply and pop-up drain fitting with compression valves, renewable seats, lever handles, raised spout, and drain knob.

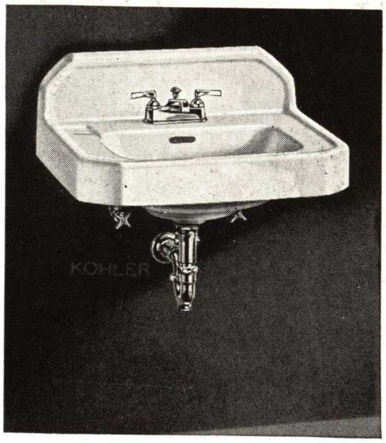
Supply Pipes: ⅜-inch I.P. size to wall with angle stops.

Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium-plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10	16x11½
Height of Back	inches	6	6
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	77	91

Furnished in white or colors.



No. K-1955-C

Greenwich Vitreous China Lavatory with back, rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hangers.

Fittings: All-metal combination supply and pop-up drain fitting with compression valves, renewable seats, lever handles, raised spout, drain knob, and 1¼-inch tail-piece.

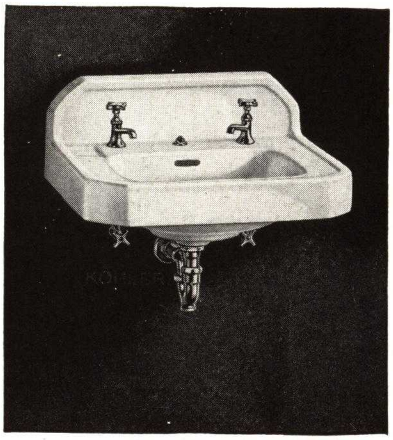
Supply Pipes: ⅜-inch I.P. size to wall with angle stops.

Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10	16x11½
Height of Back	inches	6	6
Height from Floor	inches	31	31
Approx. Ship. Wt., less Fittings	pounds	64	81

Furnished in white or colors.



No. K-1950-P

Greenwich Vitreous China Lavatory with back, rectangular bowl, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hanger.

Fittings: Compression faucets with metal cross handles, chain stay, drain plug, bead chain, and rubber stopper.

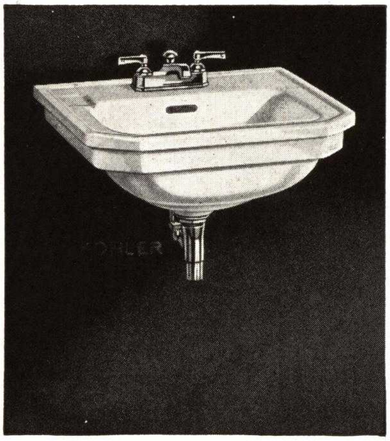
Supply Pipes: ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10	16x11½
Height of Back	inches	6	6
Approx. Ship. Wt., less Fittings	pounds	68	81

Furnished in white or colors.



No. K-2177-C

Arrowhead Vitreous China Lavatory with rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish.

FITTINGS: Combination supply and pop-up drain fitting with compression valves, renewable units, lever handles, raised spout, and drain knob.

SUPPLY PIPES: Not furnished.

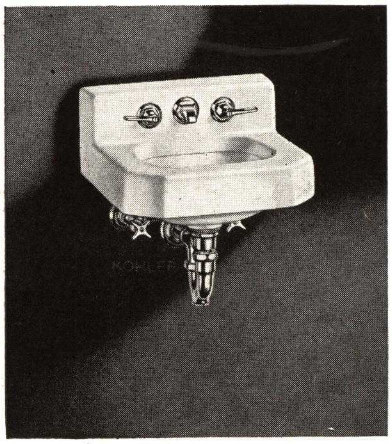
TRAP: Not furnished.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	20x18
Bowl	inches	15x10¾
Approx. Shipping Weight less Fittings	pounds	49

Furnished in white or colors.

FOR TILED-IN LAVATORY AND DRESSING TABLE COMBINATIONS.



No. K-1700-A

Rinse Vitreous China Dental Lavatory with shelf back, flushing rim, and rectangular bowl. Supported on concealed wall hanger.

FITTINGS: All-metal combination supply fitting with vacuum breaker, compression valves, renewable seats, lever handles, and supply nozzle through back; drain plug with open strainer.

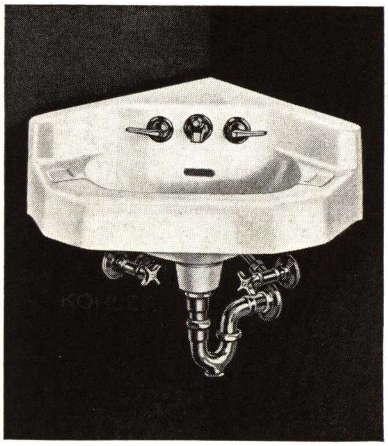
SUPPLY PIPES: ⅜-inch I.P. size to wall with flexible connections, angle stops, metal cross handles, and escutcheons.

TRAP: 1¼-inch P pattern with metal wall flange.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	14x14
Bowl	inches	9x8
Height of Back	inches	3¾
Width of Shelf	inches	3½
Approximate Shipping Weight, less Fittings	pounds	.....

Furnished in white or colors.



No. K-2180-A

Rockport Vitreous China Corner Lavatory with shelf back, oval bowl, anti-splash rim, rear outlet, open overflow, and two cast-in soap dishes. Supported on concealed wall hangers.

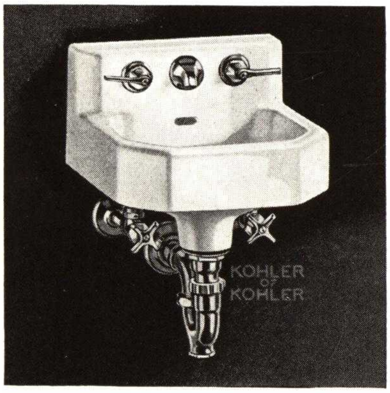
FITTINGS: All-metal combination supply and pop-up drain fitting with compression valves, renewable seats, lever handles, and drain knob.

SUPPLY PIPES: ⅜-inch I.P. size to wall with annealed vertical tubes, angle stops, metal handles, and escutcheons.

TRAP: 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	17x17
Bowl	inches	15x10½
Width of Shelf from Corner to Front	inches	7½
Corner to front of Lavatory	inches	20¼
Height of Back	inches	3½
Approximate Ship. Weight, less Fittings	pounds	......

Furnished in white or colors.



No. K-2200-BA

Walcot Vitreous China Dental Lavatory with shelf back and rectangular bowl. Supported on concealed wall hanger.

Fittings, all-metal combination supply fitting with compression valves, renewable seats, lever handles, and supply nozzle through back; drain plug with open strainer.

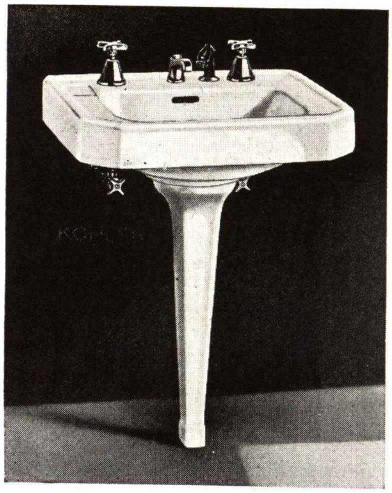
Supply pipes, ⅜-inch I.P. size to wall with flexible connections, angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	12x12
Bowl	inches	9½x7½
Height of Back	inches	3½
Width of Shelf	inches	3¼
Approximate Shipping Weight, less Fittings	pounds	27

Furnished in white or colors.



No. K-2245-A

Jamestown Vitreous China Lavatory with rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on vitreous china leg and metal wall brackets.

FITTINGS: Combination shampoo supply and drain fitting with automatic spray, compression valves, renewable units, cross handles, escutcheons, raised spout, and drain with hair-catching strainer.

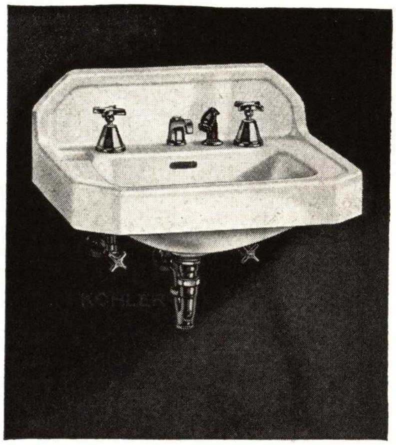
SUPPLY PIPES: ⅜-inch I.P. size to wall with angle stops.

TRAP: 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	20x18	24x20
Bowl	inches	14½x10½	16x12
Height from Floor	inches	31	31
Approx. Ship. Wt., less Ftgs	lb.	75	81

Furnished in white or colors.

USED IN BARBER SHOPS AND BEAUTY SALONS.



No. K-2265-A

Greenwich Vitreous China Lavatory with back, rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in soap dish. Supported on concealed wall hanger.

FITTINGS: Combination shampoo, supply and drain fitting with automatic spray, compression valves, renewable units, cross handles, escutcheons, raised spout, and drain with hair-catching strainer.

SUPPLY PIPES: ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

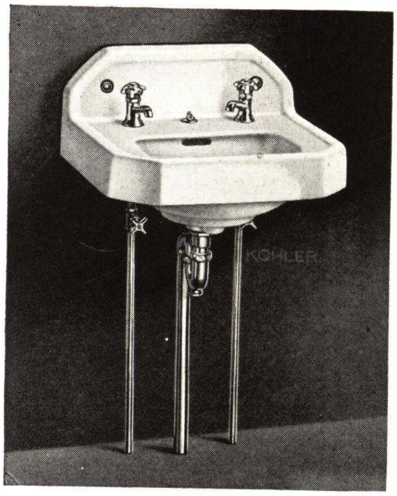
TRAP: 1¼-inch P pattern with metal wall flange.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	20x18	24x20
Bowl	inches	14x10	16x11½
Height of Back	inches	6	6
Approx. Ship. Wt., less Fittings	pounds	68	81

Furnished in white or colors.

USED IN BARBER SHOPS AND BEAUTY SALONS.



No. K-1970-M

Chatham Vitreous China Marine Lavatory with back, full splash rim, rectangular bowl, rear outlet, open overflow, and cast-in soap dish. Supported on two metal bolts with rubber sleeves and rubber concussion washers.

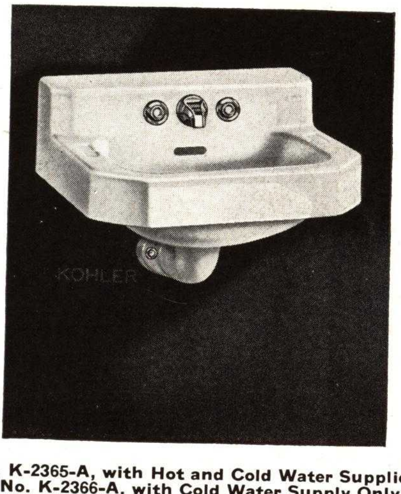
FITTINGS: Self-closing faucets with metal cross handles, chain stay, drain plug, bead chain, and rubber stopper.

SUPPLY PIPES: ⅜-inch I.P. size to floor with straight stops, metal cross handles, and escutcheons.

TRAP: 1¼-inch S pattern.

Nominal Size	inches	20x18
Bowl	inches	13x9½
Height of Back	inches	6
Height from Floor	inches	31
Approx. Ship. Weight, less Fittings	pounds	......

Furnished in white or colors.



No. K-2365-A, with Hot and Cold Water Supplies
No. K-2366-A, with Cold Water Supply Only

Milan Vitreous China Lavatory with shelf back, rear outlet, and open overflow. Supported on concealed wall hanger and wall bolts.

FITTINGS: All-metal concealed supply fitting with spout through back, self-closing push botton valves for hot and cold water, drain plug with non-removable metal stopper and 1½-inch drain connection through rear.

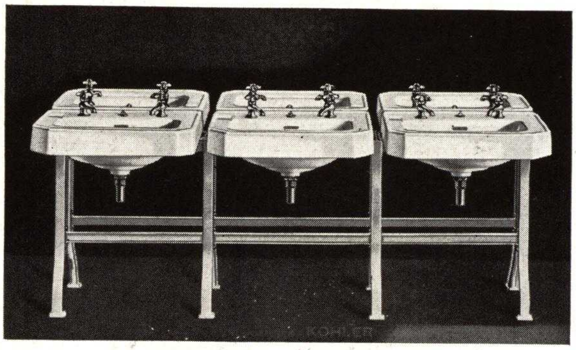
TRAP: Not furnished.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	20x14
Bowl	inches	15x9
Width of Shelf	inches	4
Height of Back	inches	3½
Approximate Shipping Weight, less Fittings	pounds	80

Fittings regularly furnished for walls not exceeding 1 inch in thickness; for other wall thicknesses when specified.

Furnished in white or colors.



No. K-2320-A, Double Section of Three Lavatories
No. K-2340-A, Single Section of Three Lavatories

Battery of Jamestown Vitreous China Lavatories with rectangular bowl, anti-splash rim, rear outlet, open overflow, and cast-in doap dish. On painted supports to floor.

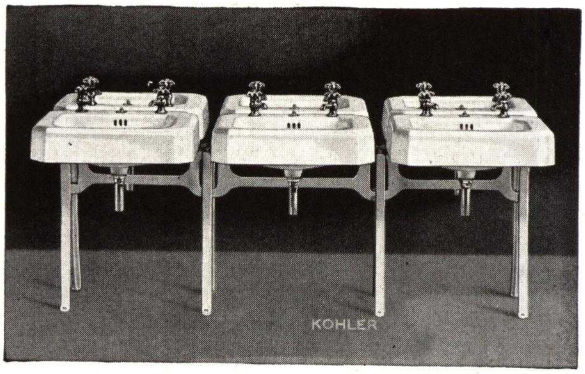
Fittings: Self-closing faucets with 4-arm metal handles, chain stays, drain plugs, bead chains, and stoppers.

Supply Pipes and Traps: Not furnished.

Exposed Brass: Chromium plated.

	No. K-2320-A No. K-2340-A	
Nominal Size, inches	20x18	24x20
Bowl, inches	14½x10½	16x12
Length Overall, Three Sections, inches	64	76
Height from Floor, inches	31	31
Approx. Ship. Wt. One Double Section, pounds	209	243
Approx. Ship. Wt. Each Additional Double Section, pounds	184	218
Approx. Ship. Wt. One Single Section, pounds	97	114
Approx. Ship. Wt. Each Additional Single Section, pounds	87	104

Furnished in white only.



No. K-3125-A, Double Section of Three Lavatories
No. K-3135-A, Single Section of Three Lavatories

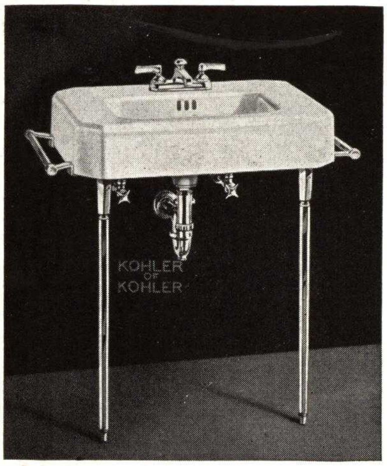
Battery of Westchester Enameled Cast Iron Lavatories with rectangular bowl, rear outlet, and integral overflow. On painted supports to floor.

Fittings: Self-closing faucets with metal cross handles, chain stays, and drain plugs with bead chains and stoppers.

Supply Pipes and Traps: Not furnished.

Nominal Size, Each Lavatory, inches	24x20
Bowl, inches	16½x12
Space between Slabs (Side), inches	2
Length Overall, Three Sections, inches	74½
Width, Double Section, inches	41¼
Width, Single Section, inches	21¼
Height from Floor, inches	31
Approx. Ship. Wt., One Dbl. Sec., pounds	270
Approx. Ship. Wt., Each Addl. Dbl. Sec., pounds	250
Approx. Ship. Wt., One Sgl. Sec., pounds	150
Approx. Ship. Wt., Each Addl. Sgl. Sec., pounds	140

Furnished in regular white enamel only.



No. K-2600-C

Westchester Enameled Cast Iron Lavatory with rectangular bowl, rear outlet, and integral overflow. Supported on concealed wall brackets and metal legs.

Fittings all-metal combination supply and pop-up drain with compression valves, renewable seats, lever handles, raised spout, drain knob, and towel bars.

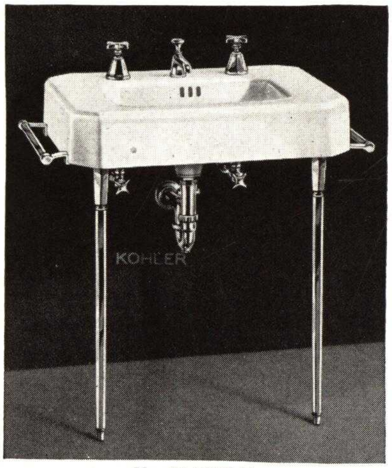
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size, inches	20x18	24x20	27x22
Bowl, inches	14½x10	16½x12	16½x12
Height from Floor, inches	31	31	31
Approximate Shipping Weight, less Fittings, pounds	94	94	127

Regular white and acid-resisting white or colored enamel.



No. K-2625-F

Westchester Enameled Cast Iron Lavatory with rectangular bowl, rear outlet, and integral overflow. Supported on painted wall brackets and metal legs.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, renewable seats and cross handles; raised spout; drain knob; two towel bars.

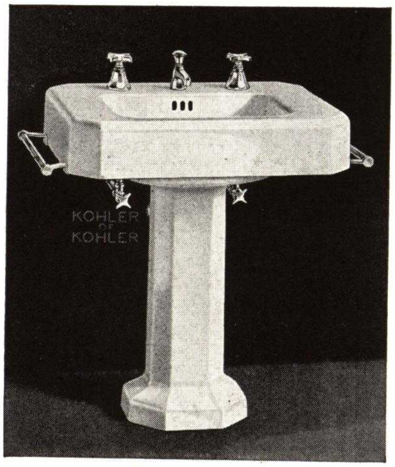
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium-plated.

Nominal Size, inches	20x18	24x20	27x22
Bowl, inches	14½x10	16½x12	16½x12
Height from Floor, inches	31	31	31
Approx. Ship. Wt., less Fittings, pounds	94	94	127

Regular white and acid-resisting white or colored enamel.



No. K-2635-F

Westchester Enameled Cast Iron Lavatory with rectangular bowl, rear outlet, and integral overflow. Supported on enameled pedestal.

Fittings, all-metal combination supply and pop-up drain with compression valves, renewable seats, lever handles, raised spout, drain knob, and towel bars.

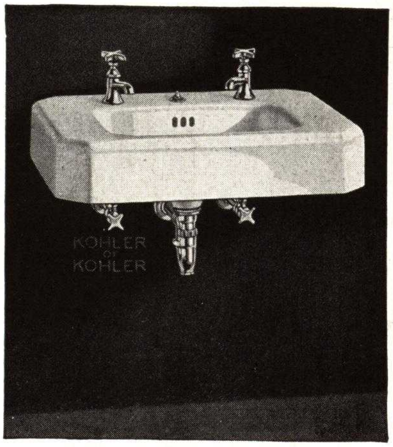
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x18	24x20	27x22
Bowl	inches	14½x10	16½x12	16½x12
Height from Floor	inches	31	31	31
Approx. Ship. Wt., less Fittings	pounds	140	145	183

Regular white and acid-resisting white or colored enamel.



No. K-2645-P

Westchester Enameled Cast Iron Lavatory with rectangular bowl, rear outlet, and integral overflow. Supported on painted wall brackets.

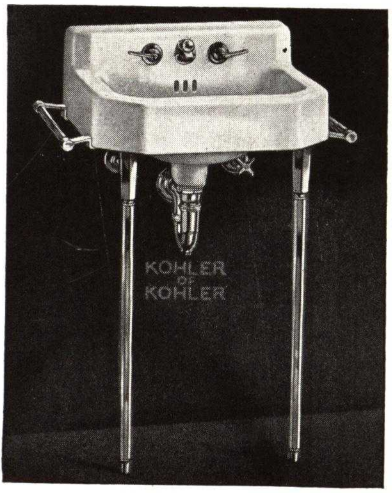
Fittings, compression faucets with metal cross handles chain stay, drain plug, bead chain, and rubber stopper.

Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and esctucheons.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	20x18	24x20
Bowl	inches	14½x10	16x12
Approx. Ship. Wt., less Fittings	pounds	88	90

Regular white and acid-resisting white or colored enamel.



No. K-2710-BA

Hampton Enameled Cast Iron Lavatory with shelf back, rectangular bowl, rear outlet, integral soap dishes, and integral overflow. Supported on metal legs.

FITTINGS: All-metal combination supply and pop-up drain fitting through back with compression valves, renewable seats, and lever handles; spout; drain knob; two towel bars.

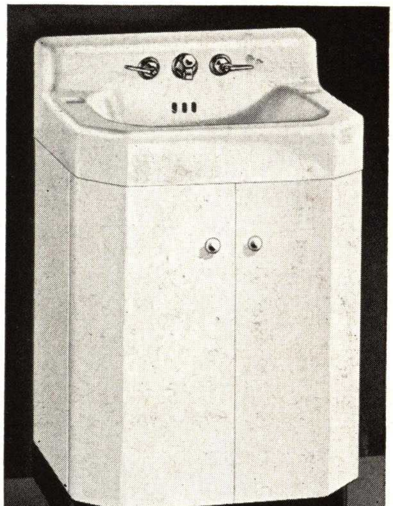
SUPPLY PIPES: ⅜-inch I.P. size to wall with annealed vertical tubes, angle stops, and metal cross handles.

TRAP: 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	*19x17	22x19
Bowl	inches	15x11	16x12½
Height of Back	inches	3½	3½
Width of Shelf	inches	4	4½
Approx. Ship. Wt., less Fittings	pounds	66	90

Regular white and acid-resisting white or colored enamel.

*Does not have depressed soap dishes.



No. K-2715-BA

Hampton Enameled Cast Iron Lavatory with shelf back, rectangular bowl, rear outlet, and integral overflow.

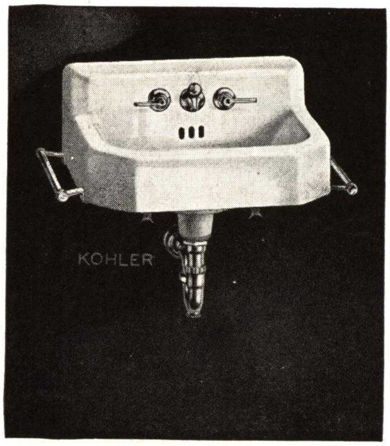
FITTINGS: All-metal combination supply and pop-up drain fitting through back with compression valves, renewable seats, lever handles, spout, and drain knob.

SUPPLY PIPES: ⅜-inch I.P. size to wall.

TRAP: 1¼-inch P pattern with metal wall flange.

CABINET: Steel, baked white enamel finish with base.

Nominal Size	inches	19x17	22x19
Bowl	inches	15x11	16x12½
Height of Back	inches	3½	3½
Width of Shelf	inches	4	4½
Approx. Ship. Wt., less Fittings	pounds	110	140



No. K-2720-BA

Hampton Enameled Cast Iron Lavatory with shelf back rectangular bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings: All-metal combination supply and pop-up drain fitting through back with compression valves, renewable seats, and lever handles; spout; drain knob; two towel bars.

Supply Pipes: ⅜-inch I.P. size to wall with annealed vertical tubes, angle stops, and metal cross handles.

Trap: 1¼-inch P pattern with metal wall flange.

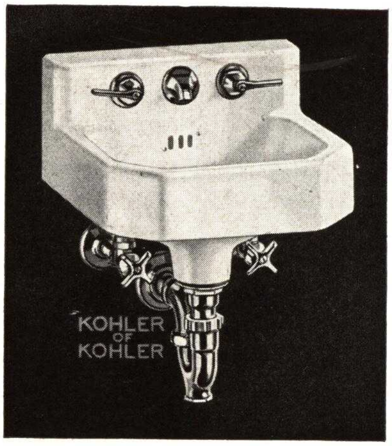
Exposed Metal: Chromium plated.

Nominal Size	inches	19x17	*22x19
Bowl	inches	15x11	16x12½
Height of Back	inches	3½	3½
Width of Shelf	inches	4	4½
Approx. Ship. Wt., less Fittings	pounds	61	85

Also available with self-closing valves.

Regular white and acid-resisting white or colored enamel.

*Has depressed soap dish.



No. K-2750-BA

Traveler Enameled Cast Iron Shelf Lavatory with rectangular bowl, center outlet, and open overflow.

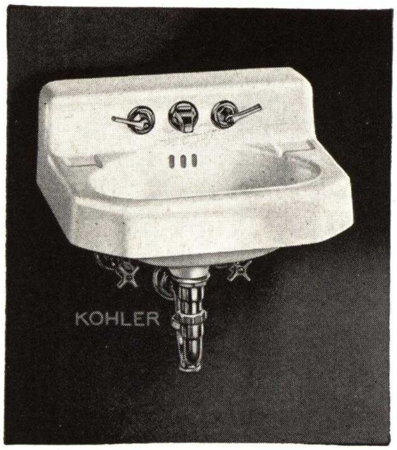
Fittings: All-metal compression valves with lever handles and escutcheons, spout through back, and drain plug with chain and stopper.

Supply Pipes: ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap: 1½-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	13 x13
Bowl	inches	9⅝x8¼
Width of Shelf	inches	3
Height of Back	inches	3½
Approximate Shipping Weight Less Fittings	pounds	43



No. K-2730-BA

Delton Enameled Cast Iron Lavatory with shelf back, oval bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, all-metal combination supply and drain fitting through back with compression valves and lever handles; spout; drain plug with bead chain and rubber stopper.

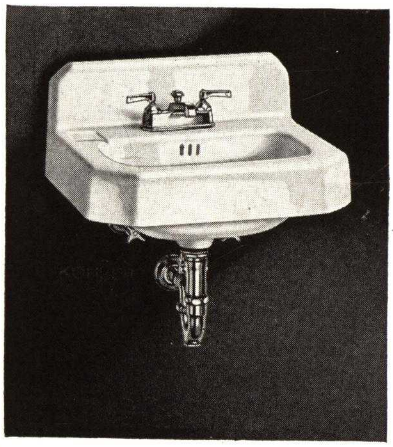
Supply pipes, ⅜-inch I.P. size to wall with vertical tubes, angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	18x15
Bowl	inches	14x10
Height of Back	inches	3½
Width of Shelf	inches	3
Approximate Shipping weight, less Fittings	pounds	55

Regular white and acid-resisting white or colored enamel.



No. K-2825-C

Hudson Enameled Cast Iron Lavatory with back, rectangular bowl, rear outlet and integral overflow. Supported on concealed wall hanger.

Fittings: All metal combination supply and pop-up drain fitting with compression valves, renewable seats, lever handles, raised spout, drain knob and towel bars.

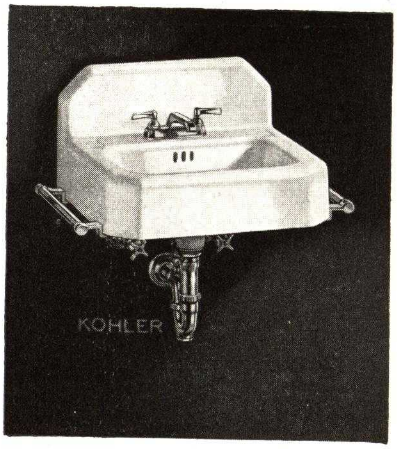
Supply Pipes: Offset, ⅜-inch I.P. size to wall with angle stops, metal cross handles and escutcheons.

Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	20x18	22x19
Bowl	inches	14½x10	16x11
Height of Back	inches	6	6
Approx. Ship. Weight, less Fittings	pounds	72	88

Regular white and acid resisting white or colored enamel.



No. K-2805-CS

Hudson Enameled Cast Iron Lavatory with back, rectangular bowl, rear outlet and integral overflow. Supported on concealed wall hanger.

Fittings, all metal combination supply and drain fitting with compression valves, renewable units, and lever handles; raised spout; drain plug with bead chain and rubber stopper; two towel bars.

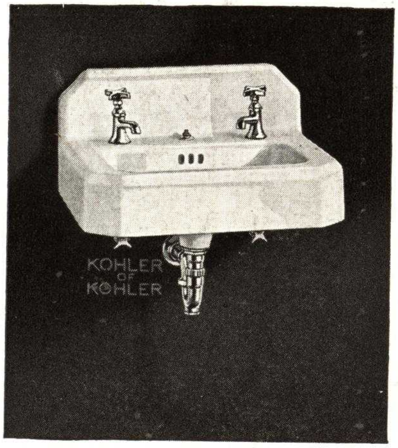
Supply pipes, offset, ⅜-inch I.P. size to wall with angle stops, metal cross handles and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x18	22x19
Bowl	inches	14½x10	16x11
Height of Back	inches	6	6
Approx. Ship. Weight, less Fittings	pounds	72	88

Regular white and acid-resisting white or colored enamel.



No. K-2815-P

Hudson Enameled Cast Iron Lavatory with back, rectangular bowl, rear outlet, and integral overflow. Supported on concealed wall hanger.

Fittings, compression faucets with metal cross handles, chain stay, drain plug, bead chain, and rubber stopper.

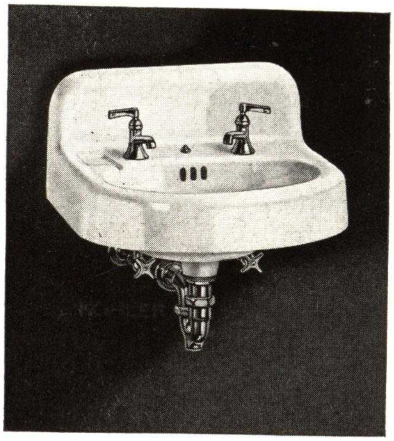
Supply pipes, ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	20x18	22x19
Bowl	inches	14½x10	16x11
Height of Back	inches	6	6
Approx. Ship. Wt., less Fittings	pounds	72	88

Regular white and acid-resisting white or colored enamel.



No. K-2880-P

Bretton Enameled Cast Iron Lavatory with back, oval bowl, rear outlet, integral overflow, and cast-in soap dish. Supported on concealed wall hanger.

FITTINGS: Compression faucets with metal lever handles, chain stay, drain plug, bead chain, and rubber stopper.

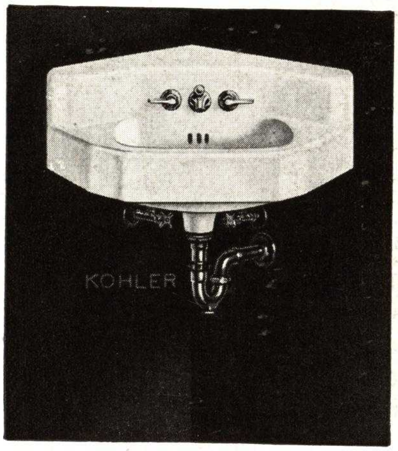
SUPPLY PIPES: ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

TRAP: 1¼-inch P pattern with metal wall flange.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	19x17
Bowl	inches	14¾x10½
Height of Back	inches	6
Approximate Shipping Weight, less Fittings	pounds	58

Furnished in regular white and acid-resisting white enamel.



No. K-2920-BA

Marston Enameled Cast Iron Corner Lavatory with shelf back, oval bowl, rear outlet, and integral overflow. Supported on concealed wall hangers.

FITTINGS: All-metal combination supply and pop-up drain fitting through back with compression valves, renewable seats, and lever handles; spout, and drain knob.

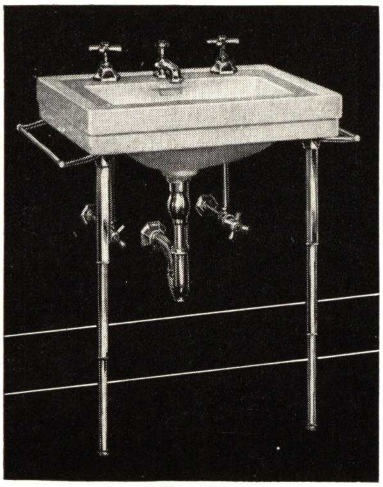
SUPPLY PIPES: ⅜-inch I.P. size to wall with annealed vertical tubes, angle stops, metal cross handles, and escutcheons.

TRAP: 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	16x16
Bowl	inches	15x11
Height of Back	inches	3½
Width of Shelf, Corner to Front	inches	7½
Corner to Front	inches	20⅜
Approximate Shipping Weight, less Fittings	pounds	74

Also available with self-closing valves at added cost.

Regular white and acid-resisting white or colored enamel.



No. 410

Aqua-Chrome Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and hooded overflow. Supported on metal wall brackets and Art design metal legs. Art design metal towel bars.

Fittings: All-metal combination supply and pop-up drain fitting with compression valves, cross handles, raised spout, and drain knob.

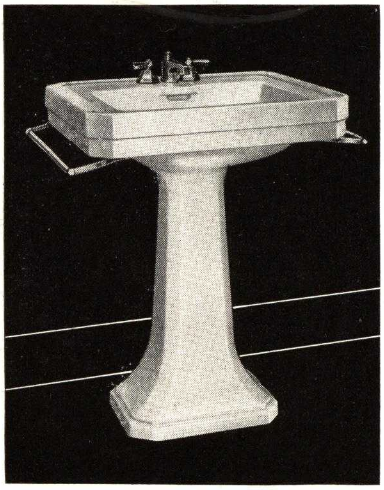
Supply Pipes: ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

Trap: 1¼-inch P pattern with metal flange.

Exposed Metal: Chromium plated.

Nominal Size	in.	20x18	24x20	27x22
Bowl	in.	15¾x10¼	16¾x12¼	18½x13½
Approx. Ship. Wt., less Fittings	lb.	69	75	84

Furnished in white or colors.



No. 530-C

Westbrook Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and hooded overflow. Supported on metal wall brackets and vitreous china pedestal.

Fittings: All-metal combination supply and pop-up drain fitting with compression valves, lever handles, raised spout, and drain knob.

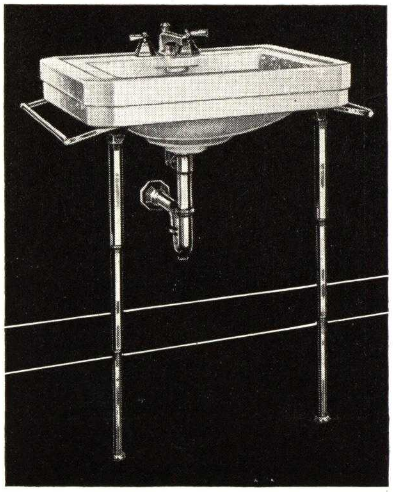
Supply Pipes: Concealed adjustable annealed tubing with ⅜-inch I.P. size tee handle angle stops to wall.

Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	24x20	27x22
Bowl	inches	16¾x12¼	18½x13½
Height From Floor	inches	31	31
Approx. Ship. Wt., less Fittings	lb.	122	133

Furnished in white or colors.



No. 430-C

Aqua-Chrome Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and hooded overflow. Supported on metal wall brackets and Art design metal legs. Art design metal towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, lever handles, raised spout, and drain knob.

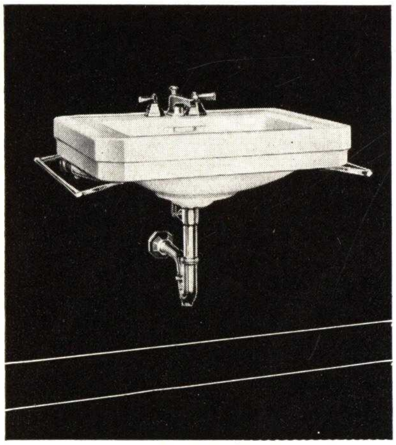
Supply pipes, concealed adjustable annealed tubing with ⅜-inch I.P. size tee handle angle stops.

Trap, 1¼-inch P pattern with metal flange.

Exposed metal chromium plated.

Nominal Size	inches	24x20	27x22
Bowl	inches	16¾x12¼	18½x13½
Approx. Ship. Wt., less Fittings	pounds	85	95

Furnished in white or colors.



No. 630-C

Wyngate Vitreous China Lavatory with square bowl, anti-splash rim, rear outlet, and overflow. Supported on metal wall brackets. Metal towel bars.

Fittings: All-metal combination supply and pop-up drain fitting with compression valves, lever handles, raised spout, and drain knob.

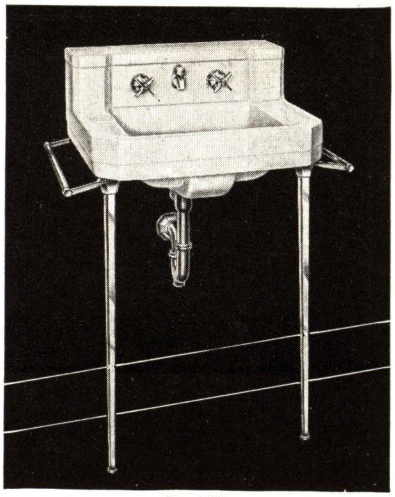
Supply Pipes: Concealed adjustable annealed tubing with ⅜-inch I.P. size tee handle angle stops.

Trap: 1¼-inch P pattern with metal flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	24x20	27x22
Bowl	inches	16¾x12¼	18½x13½
Approx. Ship. Wt., less Fittings	pounds	92	102

Can be furnished with soap depression when specified.
Furnished in white or colors.



No. 766

Wilmington Vitreous China Lavatory with shelf back, square bowl, anti-splash rim, rear outlet, concealed front overflow, and depressed soap dish. Supported on concealed wall hanger and metal legs with towel bars.

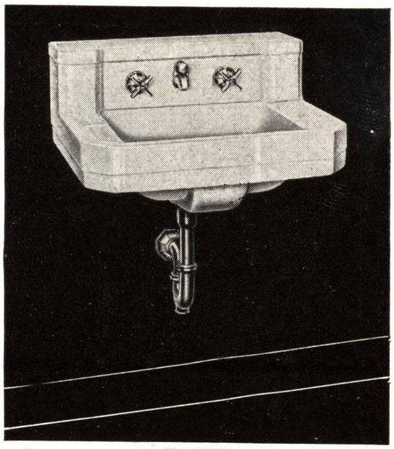
Fittings: All-metal combination supply and pop-up drain fitting with compression valves, renewable units, cross handles, and drain knob.

Supply Pipes: ⅜-inch I.P. size to wall with angle stops.

Trap: 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	22x18
Bowl	inches	14¼x11¾
Shelf Area	inches	21x4½
Height of Back	inches	5½
Height from Floor	inches	31
Approx. Ship. Weight, less Fittings	pounds	90

Furnished in white or colors.



No. 770

Wilmington Vitreous China Lavatory with shelf back, square bowl, anti-splash rim, rear outlet, concealed front overflow, and depressed soap dish. Supported on concealed wall hanger.

Fittings: All-metal combination supply and pop-up drain fitting, compression valves, renewable units, cross handles, and drain knob.

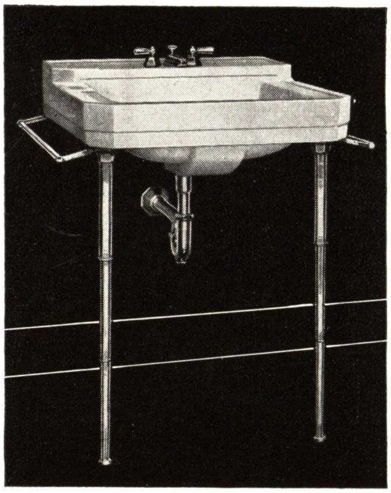
Supply Pipes: ⅜-inch I.P. size to wall with angle stops.

Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	22x18
Bowl	inches	15¼x11¾
Shelf Area	inches	21x4½
Height of Back	inches	5½
Approx. Ship. Weight, less Fittings	pounds	78

Furnished in white or colors.



No. 805

Winston Vitreous China Lavatory with integral raised shelf, square bowl, anti-splash rim, rear outlet, concealed front overflow, and depressed soap dish. Supported on concealed wall hanger and metal legs with towel bars.

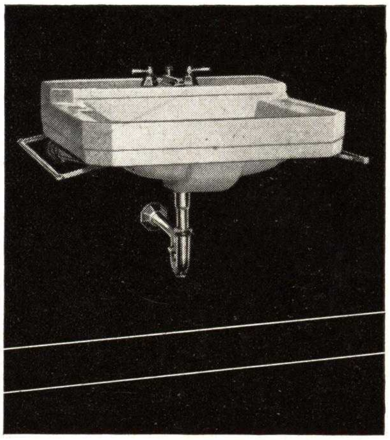
Fittings, all-metal combination supply and pop-up drain fitting with compression valves, lever handles, raised spout, and drain knob.

Supply pipes, concealed adjustable annealed tubing with ⅜-inch I.P. size tee handle angle stops to wall.

Trap, 1¼-inch P pattern with metal wall flange.

Nominal Size	inches	22x18	24x20	27x22
Bowl	inches	15½x10¾	17½x11¾	18½x13
Width of Shelf	inches	5½	6½	7¼
Height from Floor	inches	31	31	31
Approx. Ship. Wt., less Ftgs.	lbs.	85	88	105

Furnished in white or colors.



No. 825

Warwick Vitreous China Lavatory with integral raised shelf, square bowl, anti-splash rim, rear outlet, and concealed front overflow. Supported on concealed wall brackets. Hexagon design metal towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, lever handles, raised spout, and drain knob.

Supply pipes, concealed adjustable annealed tubing with ⅜-inch I.P. size tee handle angle stops to wall.

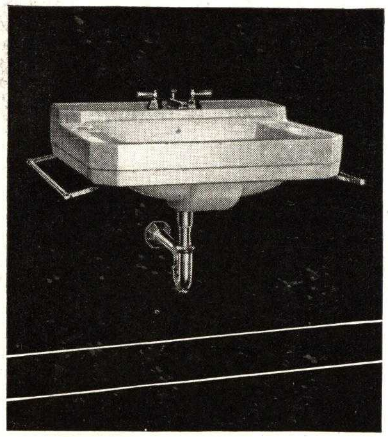
Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	22x18	24x20	27x22
Bowl	inches	15½x10¾	17½x11¾	18½x13
Width of Shelf	inches	5½	6½	7¼
Approximate Shipping Weight, less Fittings	lbs.	80	92	108

Available with depressed soap dish when specified.

Furnished in white or colors.



No. 841

Winsted Vitreous China Lavatory with integral raised shelf, square bowl, anti-splash rim, rear outlet, concealed front overflow, and depressed soap dish. Supported on concealed wall hangers. Hexagon design metal towel bars.

Fittings, all-metal combination supply and pop-up drain fitting with compression valves, lever handles, raised spout, and drain knob.

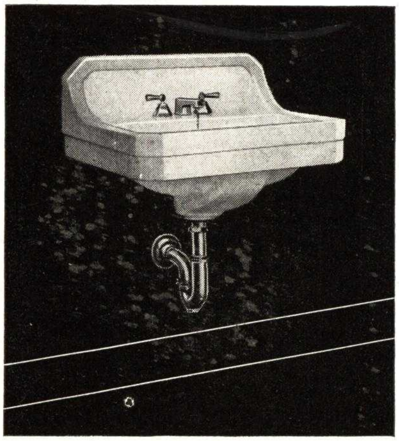
Supply pipes, concealed adjustable annealed tubing with ⅜-inch I.P. size angle stops to wall.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	22x18
Bowl	inches	15½x10¾
Width of Shelf	inches	5½
Approx. Ship. Wt., less Fittings	pounds	65

Furnished in white or colors.



No. 915

Avon Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, concealed front overflow, and depressed soap dish. Supported on concealed wall hanger.

Fittings, all-metal combination supply and drain with compression valves, lever handles, raised spout, bead chain and rubber stopper.

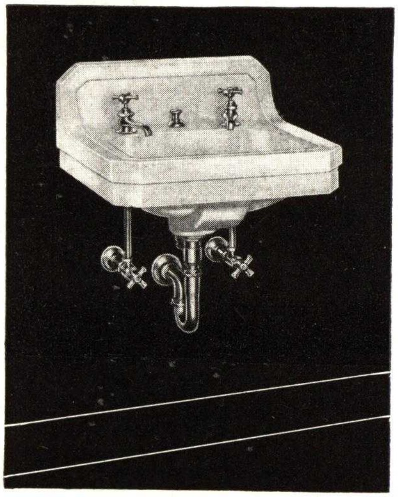
Supply pipes, concealed adjustable annealed tubing with ⅜-inch I.P. size tee handle angle stops to wall.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	19x16	20x18
Bowl	inches	16x9	15x10½
Height of Back	inches	5	6
Approx. Ship. Wt., less Fittings	pounds	55	62

Furnished in white or colors.



No. 900

Avon Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, concealed front overflow, and depressed soap dish. Supported on concealed wall hanger.

FITTINGS: Compression faucets with metal cross handles and pop-up drain with metal knob.

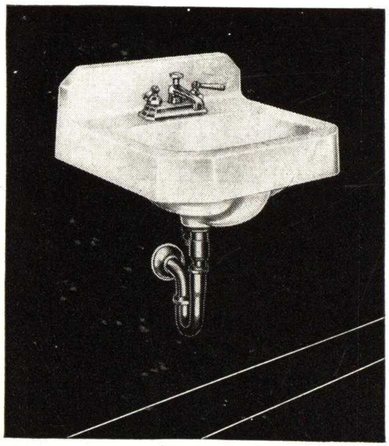
SUPPLY PIPES: ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

TRAP: 1¼-inch P pattern with metal wall flange.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	19x16	20x18
Bowl	inches	16x9½	15x10½
Height of Back	inches	5	6
Approx. Ship. Wt., less Fittings	pounds	60	65

Furnished in white or colors.



No. 920

Stewart Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, concealed front overflow, and depressed soap dish. Supported on concealed wall hanger.

FITTINGS: All-metal combination supply and pop-up drain with compression valves, lever handles, raised spout, and drain knob.

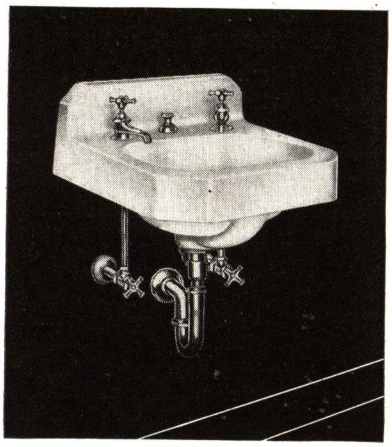
SUPPLY PIPES: concealed adjustable annealed tubing with ⅜-inch I.P. size tee handle angle stops to wall.

TRAP: 1¼-inch P pattern with metal wall flange.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	18x15½
Bowl	inches	14x9
Height of Back	inches	4
Approx. Shipping Weight, less Fittings	pounds	35

Furnished in white or colors.



No. 922

Stewart Vitreous China Lavatory with back, square bowl, anti-splash rim, rear outlet, concealed front overflow, and depressed soap dish. Supported on concealed wall hanger.

Fittings: Compression faucets with metal cross handles and pop-up drain with metal knob.

Supply Pipes: ⅜-inch I.P. size to wall with angle stops, metal cross handles, and escutcheons.

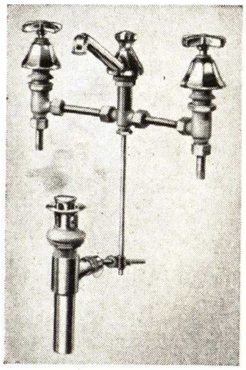
Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	18x15½
Bowl	inches	14x9
Height of Back	inches	4
Approx. Shipping Weight, less Fittings	pounds	35

Furnished in white or colors.

No. E-363 McDonald Lavatory Supply and Drain Fittings



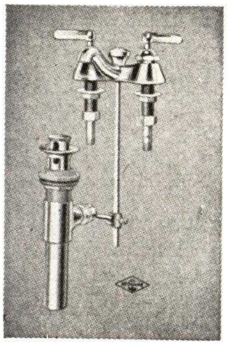
Diamond Line

A lavatory supply and drain fitting with compression valves, raised spout, and pop-up drain with 1¼-inch outside diameter tail-piece.

Chromium plated brass.

If desired with Metropolitan handles, specify No. E-366 when ordering.

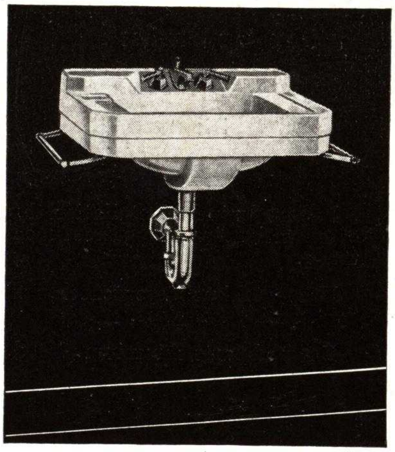
No. E-367 McDonald Lavatory Supply and Drain Fittings



Diamond Line

A 4-inch center set lavatory supply and drain fitting with lever handle compression valves, pop-up drain and 1¼-inch outside diameter tail-piece.

Chromium plated brass.



No. 930

Cosmette Vitreous China Lavatory with integral raised shelf, concealed front overflow, and square bowl with anti-splash rim. Supported on concealed wall hanger. Art design metal towel bars.

Fittings: Art design combination supply and pop-up drain, angle pattern, with quick compression valves, metal lever handles, raised spout, and metal drain knob.

Supply Pipes: Concealed adjustable annealed tubing with ⅜-inch I.P. size wheel handle angle stops.

Trap: ¼ inch P pattern with metal flange.

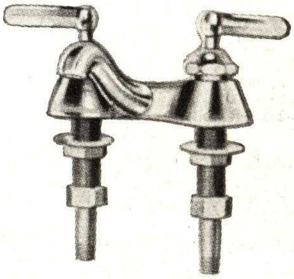
Exposed Metal: Chromium plated.

Nominal Size	inches	20x13½	24x16½
Bowl	inches	13¾x8½	16x10½
Approximate Ship. Weight	pounds	55	76

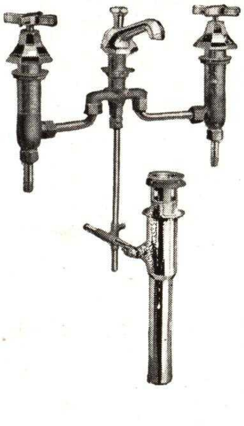
Furnished in white or colors.

No. E-368 McDonald Lavatory Supply Fittings

Diamond Line



A 4-inch center set lavatory supply fitting with lever handle compression valves. With ¼-inch I.P.S. tail-pieces, coupling nuts, and lock nuts. Chromium plated brass.



No. 746 Chicago Quaturn Combination Lavatory Supply and Drain Fittings

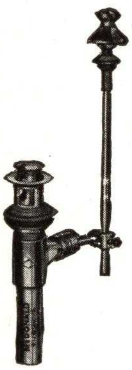
Hi-Lite Trim

Chromium-plated lavatory supply and drain fitting with center type anti-siphon mixing spout, 3¾-inch center to center.

Center to center of valves, 12 inches; outside diameter of valves, 1¼ inches; outside diameter of spout shank, 1 inch; top of slab to end of valve tail-piece, 7 inches; bottom of lavatory outlet to end of 1¼-inch O.D. drain tail-piece, 8½ inches.

Can be furnished at extra cost with 1½-inch O.D. tail-piece.

No. E-365-A McDonald Lavatory Pop-Up Drains



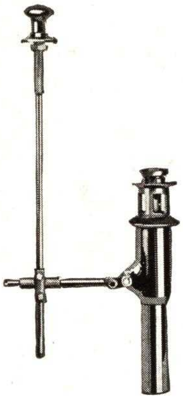
Diamond Line

Pop-up drain for installation through slab of enameled iron or vitreous china lavatories.

Has metal knob, escutcheon, and 1¼-inch O.D. tubing tail-piece.

Exposed parts chromium plated.

No. 326 Chicago Pop-Up Lavatory Drains



Indirect action—raising knob closes plug, lowering knob opens plug. Extremely simple in construction. Parts are balanced for easy, positive action.

Simple to install and adjust. Readily accessible.

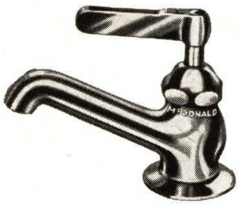
Measures 8½ inches underside of bowl to end of waste tube.

Metal knob. Chromium plated.

Stopper and plug nickel silver.

No. **326**, with 1½-Inch O.D. Tail-Piece........................each ....

Can be supplied, at extra cost, with 1½-inch O.D. tail-piece.



No. E-3666 McDonald Compression Lavatory Faucets

Diamond Line

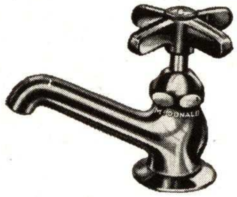
High Spout—Regular Pattern

Compression faucet with high spout, indexed lever handle—quarter turn. Center of spout to center of faucet body, 3⅜ inches.

McDonald Compression Lavatory Faucets

Diamond Line

High Spout—Regular Pattern

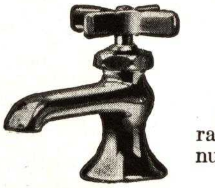


No. E-3665

Diamond Line compression lavatory faucet with high spout and indexed cross handle. Center of spout outlet to center of faucet body, 3⅜ inches. Discharge of spout is 1⅜ inches above base of faucet.

No. E-3668

Same as above except with Metropolitan handle.



No. 700 Quaturn Compression Lavatory Faucets

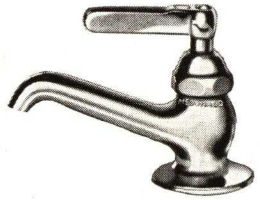
Compression lavatory faucet with raised spout, metal cross handle, coupling nut, and ¼-inch outside I.P.T. tail-piece.

No. **700**, Chromium Plated......................each ....

No. E-3686 McDonald Compression Lavatory Faucets

Diamond Line

Large Pattern—High Spout



With renewable seat. Indexed lever handle, quarter turn.

Measures 3⅝ inches from center of spout outlet to center of faucet body. Discharge of spout is 1⅜ inches above base of faucet to comply with sanitary codes.

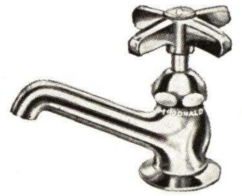
Furnished with lock nuts, union nuts, tail-pieces for ¼-inch pipe, and lock washers. Can be furnished without tail-pieces when specified, or less tail-pieces with 7/16-inch nut, friction ring and washers.

Chromium plated brass. Packed 1 pair in a box.

No. E-3685 McDonald Compression Lavatory Faucets

Diamond Line

Large Pattern—High Spout



With renewable seat. Indexed cross handle, quarter turn.

Measures 3⅝ inches from center of spout outlet to center of faucet body. Discharge of spout is 1⅜ inches above base of faucet to comply with sanitary codes.

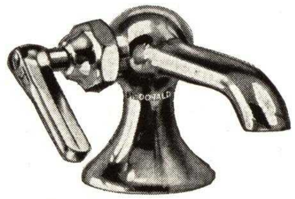
Furnished with lock nuts, union nuts, tail-pieces for ¼-inch pipe, and lock washers. Can be furnished without tail-pieces when specified, or less tail-pieces with 7/16-inch nut, friction ring and washers.

Chromium plated brass. Packed 1 pair in a box.

If desired with Metropolitan handles, specify No. E-3688.

No. E-3646 McDonald Compression Lavatory Faucets

Regular Pattern

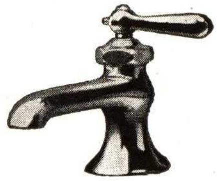


A brass compression lavatory faucet quarter turn, with indexed side metal lever handle.

Furnished with lock nuts, union nuts, tail-pieces, for ¼-inch pipe, and lock washers. Shank length, 2¼ inches.

Can be furnished less tail-pieces when specified, or less tail-pieces with 7/16-inch nut, friction ring and washers.

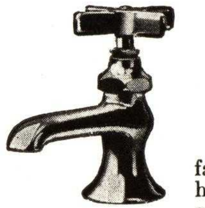
Packed 1 pair in a box.



No. 730 Quaturn Compression Lavatory Faucets

Chromium-plated compression lavatory faucet with raised spout, metal lever handle, coupling nut, and ¼-inch outside I.P.S. tail-piece.

No. **730**..each ....



No. 701 Chicago Klo-Self Self-Closing Lavatory Faucets

Chromium-plated self-closing lavatory faucet with raised spout, metal cross handle, coupling nut, and ¼-inch outside I.P.T. tail-piece.

No. 333 Chicago Naiad High Body Push-Button Lavatory Faucets

Furnished regularly self-closing. When so specified can also be supplied slo-closing.

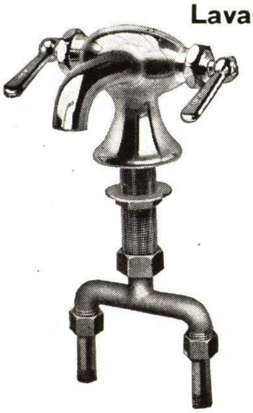
Furnished with shank 2¼ inches long and ¼-inch iron pipe tail-piece.

Can also be furnished less tail-piece to slip 7/16 or ½-inch O.D. tubing where so specified.

Chromium plated.

Available with longer shank at added cost.

No. 342 Chicago Quaturn Double Lavatory Faucets



Furnished regularly with spout measuring 3½ inches center to center.

Center to center of supplies, 4 inches; diameter of shank, 1.05 inches; diameter of flange, 2½ inches; bottom of flange to end of tail-piece, 7¾ inches.

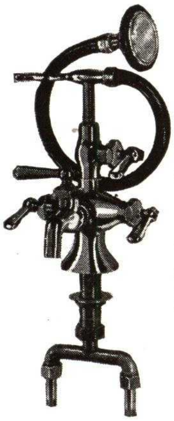
Metal handles. Chromium plated

No. **342**................each ....

Can be supplied, at extra cost, with 4½-inch long spout; with chain stay in faucet base; with 2-inch flange.

Also available with removable shampoo hose nozzle on spout outlet.

No. 590 Quaturn Combination Shampoo and Lavatory Faucets

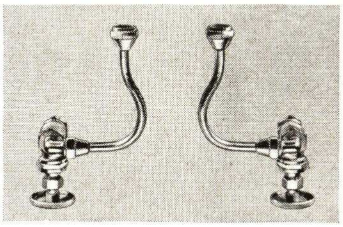


An all-metal compression combination shampoo and lavatory faucet.

Has lavatory outlet, shampoo spout with rubber hose and spray, lever handles, special connection with couplings, and ¼-inch outside I.P. thread tail-pieces.

Exposed metal is chromium plated.

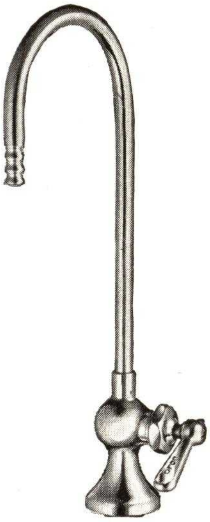
Concealed Lavatory Supply Pipes



Concealed adjustable annealed lavatory supply pipes with wheel handle compression stops.

No. **175**, for Lavatory Fittings with 4-In. Ctrs.	each	....
No. **176**, for Cosmette Lavatory	each	....
No. **177**, for Wilmington Lavatory	each	....

No. 49 Chicago Quaturn Single Pantry Sink Faucets



With rigid gooseneck spout arranged for attaching ⅜-inch I.D. hose.

Bottom of flange to spout outlet, 10 inches.

Center of faucet to center of spout outlet, 5 inches.

Flange diameter, 2⅛ inches.

Bottom of flange to end of tail-piece, 4¾ inches.

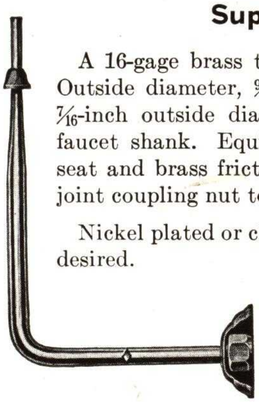
Diameter of shank, 13/16 inch.

Has lever handle.

Chromium plated.

Can also be furnished, with ¾-inch male hose thread on outlet, or with spout outlet tapped ¼-inch I.P. female, and fitted with removable hose nozzle with tapered neck to slip laboratory rubber hose.

No. E-421-A McDonald Lavatory Supply Pipes



A 16-gage brass tubing supply pipe, 6x10 inches. Outside diameter, 9/16-inch. Ends swedged down to 7/16-inch outside diameter to fit inside of lavatory faucet shank. Equipped with cone shaped rubber seat and brass friction ring. With ½-inch I.P. slip joint coupling nut to floor.

Nickel plated or chromium plated; specify which is desired.

McDonald Lavatory Supply Connections

Angle

Length, 5 inches; ⅜-inch iron pipe size. Outside diameter, 7/16-inch.

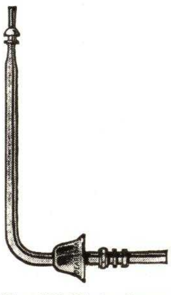
Nickel plated or chromium plated brass; specify which is desired.

No. E-421-D, angle connection.

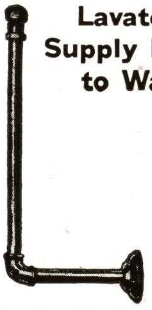
No. E-421-E, straight connection.

Straight

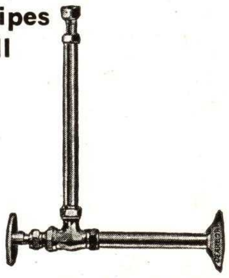
Lavatory Supply Pipes to Wall



No. 425 Plain Annealed



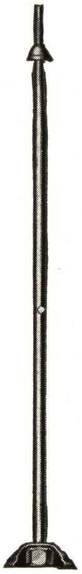
No. 455 Plain



No. 458 with Stop

		N.P.	C.P.
No. **425**, 9/16-Inch O.D., Annealed	per pair	.....	.....
No. **455**, ⅜-Inch I.P.S.	per pair	.....	.....
No. **458**, ⅜-Inch I.P.S. with Stop	per pair	.....	.....

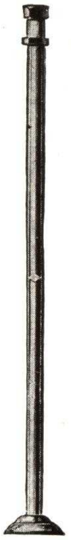
McDonald Lavatory Supply Pipes


No. E-421-B

No. E-421-B

A 16-gage brass tubing supply pipe 29 inches long. Outside diameter, 9/16-inch. Ends swedged down to 7/16-inch outside diameter to fit inside of lavatory faucet shank and equipped with cone shaped rubber seat and brass friction ring. With ½-inch I.P. slip joint coupling nut to floor.

Nickel plated or chromium plated; specify which is desired.


No. E-426-A

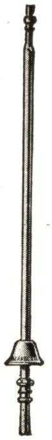
No. E-426-A

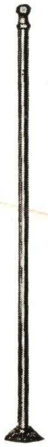
A 12-gage brass tubing supply pipe with tubes 26½ inches long. I.P. size, ⅜-inch.

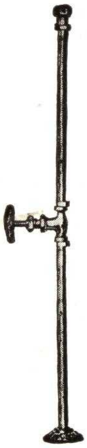
Equipped with reducer for tail-piece.

Nickel plated or chromium plated; specify which is desired.

Lavatory Supply Pipes to Floor


No. 423 Annealed


No. 443 Plain

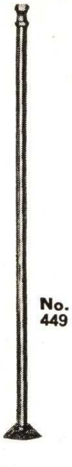

No. 446 with Stop

		N.P.	C.P.
No. **423**, 9/16-Inch O.D., Annealed	per pair	.....	.....
No. **443**, ⅜-Inch I.P.S.	per pair	.....	.....
No. **446**, ⅜-Inch I.P.S. with Stop	per pair	.....	....

Lavatory Supply Pipes

I. P. S. Thread to Floor—Reducing Coupling to Fixture

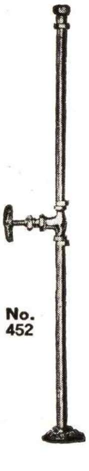
Furnished with heavy flange.
I. P. S., ⅜ inch. Gage, 14.
Wrapped 1 pair in a package.


No. 449

No. 449

Straight lavatory supply pipe with reducing couplings.

No. **449**, Nickel Plated	per pair	**$2.94**
No. **449**, Chromium-Plated	per pair	**3.72**

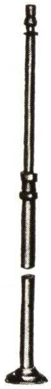

No. 452

No. 452

Straight lavatory supply pipe with wheel handle stops and reducing couplings.

No. **452**, Nickel-Plated	per pair	**$6.74**
No. **452**, Chromium-Plated	per pair	**8.47**

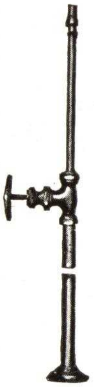
E-Z Bend Copper Lavatory Supply Pipes


No. 439-A

E-Z Bend Straight Lavatory Supply Pipe with ground joint brass union connection; ⅜-inch I.P.S. or 14 gage tube. Length overall, 30½ inches.

Furnished with sure grip flanges.

Polished chrome plated with satin finish copper upright tube.


No. 440-A

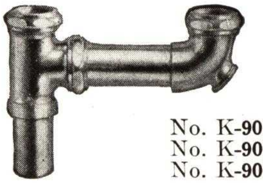
No. 439

No. **439**-A, with Type A Slip Joint Upright	per pair	....
No. **439**-B, with Type B Ground Joint Upright	per pair	....

No. 440—With Wheel Handle Stop

No. **440**-A, with Type A Slip Joint Upright	per pair	....
No. **440**-B, with Type B Ground Joint Upright	per pair	....

Kohler Continuous Drains



Chromium plated brass continuous drain with 1½-inch slip joint inlets, 1½-inch O.D. tailpiece outlet, and clean-out.

No. K-**9060**, with 2 inlets, 16-inch centers.
No. K-**9060**, with 2 inlets, 20-inch centers.
No. K-**9060**, with 2 inlets, 24-inch centers.

Bent Tube Adjustable P Traps

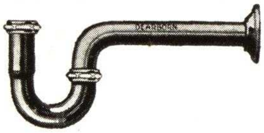
Wrought Brass—Without Cleanout

Adjustable P Trap with seamless brass bent tube body and outlet tube, cast nuts and sure-grip wrought brass flange.

No.		700	701	700A	701A
Nickel-Plated	each	....	....	....	....
Chromium-Plated	each	....	....	....	....
For 6 Inches Longer than Regular, Add		....	....	....	....
Size	inches	1¼	1¼	1¼	1¼
Length, Reg., End to Center	in.	11	11	12½	12½
Gage No.		20	17	20	17

Bent Tube Adjustable P Traps

Wrought Brass—Without Cleanout

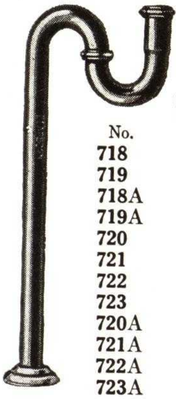


Adjustable P Trap with seamless brass bent tube body and outlet tube, cast nuts and sure-grip wrought brass flange.

No.		702	703	704	705
Nickel-Plated	each	....	....	....	....
Chromium-Plated	each	....	....	....	....
For 6 Inches Longer than Regular, Add		....	....	....	....
Outlet	inches	1½	1½	1½	1½
Inlet	inches	1½	1¼	1½	1¼
Length, Regular, End to Center	in.	12	12	12	12
Gage No.		20	20	17	17

Bent Tube Adjustable S Traps

Wrought Brass—Without Cleanout

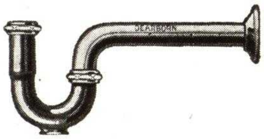


Adjustable S Trap with seamless brass bent tube body and outlet tube, cast nuts and sure-grip wrought brass flange.

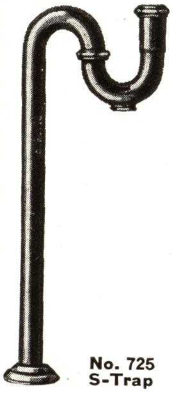
No.	Nickel-Plated Each	Chrom.-Plated Each	Outlet In.	Inlet In.	Length End to End, In.	Gage No.
718	....	....	1¼	1¼	20½	20
719	....	....	1¼	1¼	20½	17
718A	....	....	1¼	1¼	26½	20
719A	....	....	1¼	1¼	26½	17
720	....	....	1½	1½	20½	20
721	....	....	1½	1¼	20½	20
722	....	....	1½	1½	20½	17
723	....	....	1½	1¼	20½	17
720A	....	....	1½	1½	26½	20
721A	....	....	1½	1¼	26½	20
722A	....	....	1½	1½	26½	17
723A	....	....	1½	1¼	26½	17

Bent Tube Adjustable Traps

With Cleanout—Less P.O. Plug



No. 707 P Trap

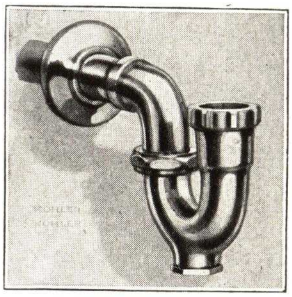


No. 725 S-Trap

Wrought brass plain traps made of seamless 17-gage wrought brass tubing. Furnished with cleanout, cast brass nuts, and sure-grip wrought flanges.

No.	707	710	711	725	728	729
N.P. ea.	...	...	...	...	...	...
C.P. ea.	...	...	...	...	...	...
Trap	P	P	P	S	S	S
Outlet in.	1¼	1½	1½	1¼	1½	1½
Inlet in.	1¼	1½	1¼	1¼	1½	1¼
Length in.	11	12	12	20½	20½	20½

No. K-9020 Kohler Cast Brass Adjustable P Traps



With Cleanout

Chromium-plated cast brass adjustable P trap with slip joint inlet and O.D. tubing outlet with escutcheon.

Size Trap inches	1¼	1½	1½
Size Inlet inches	1¼	1¼	1½
No. K-9020 each	...	...	...

Cast Brass P Traps

No. K-9024

Chromium-plated adjustable P trap with cleanout plug, slip joint inlet and I.P. thread outlet.

Inlet, S.J. in.	1¼	1¼	1½
Outlet, I.P.S. in.	1¼	1½	1½

No. K-9024-A

Same as No. K-9024 except with 6-inch brass I.P.S. nipple and wall flange.

No. K-9024-B

Same as No. K-9024 except with 6-inch brass cover tube and wall flange.

Cast Brass P Traps

No. K-9030

Chromium-plated P trap with cleanout plug, slip joint inlet and I.P. thread outlet.

Size Inlet in.	1¼	1½	1½
Size Outlet in.	1½	1½	2

No. K-9030-A

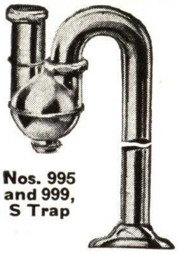
Same as No. K-9030 except with 6-inch brass I.P.S. nipple and wall flange.

No. K-9030-B

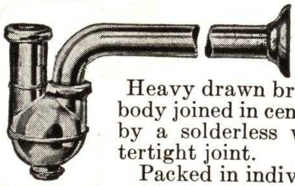
Same as No. K-9030 except with 6-inch brass cover tube and wall flange.

Femco Deep Seal Anti-Syphon Traps

With Cleanout



Nos. 995 and 999, S Trap



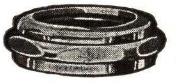
Nos. 994 and 998, P Trap

Heavy drawn brass body joined in center by a solderless watertight joint.

Packed in individual boxes, taped and labeled.

No.	Outlet Inches	Inlet Inches	Length Inches	No. 20 Gage N.P. Each	No. 20 Gage C.P. Each	No. 17 Gage N.P. Each	No. 17 Gage C.P. Each
994	1¼	1¼	11	....	....	....	....
995	1¼	1¼	20½	....	....	....	....
*998	1½	1½	11	....	....	....	....
*999	1½	1½	26½	....	....	....	....

*Furnished with 1¼-inch inlets if specified.



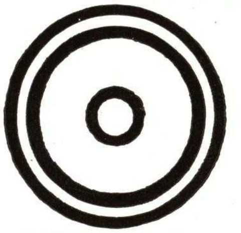
Cast Brass Slip Joint Nuts

Iron Pipe Thread with Friction Rings and Rubber Washers

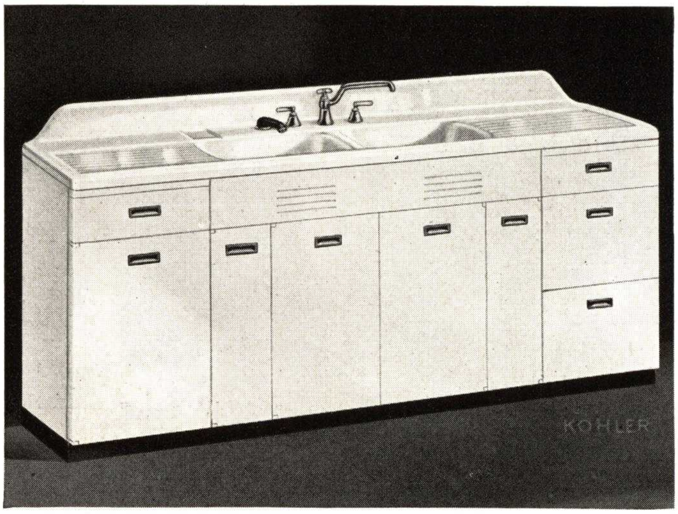
No.	Size Inches	Rough Brass per 100	Satin N.P. per 100	Pol. N.P. per 100	Pol. C.P. per 100
1600	⅜x 7/16	$7.50	$8.40	$8.80	$11.80
1600A	⅜x ½	7.50	8.40	8.80	11.80
1600B	⅜x ⅛*	7.50	8.40	8.80	11.80
1601	½x 7/16	10.10	11.10	12.00	14.40
1601A	½x ½	10.10	11.10	12.00	14.40
1601B	½x 9/16	10.10	11.10	12.00	14.40
1601C	½x ⅛*	10.10	11.10	12.00	14.40
1602	1¼x1¼	14.84	15.45	17.80	22.00
1602A	1¼x1⅜	14.84	15.45	17.80	22.00
1603	1½x1¼	20.24	20.75	23.34	28.00
1604	1½x1⅜	20.24	20.75	23.34	28.00
1605	1½x1½	17.85	18.35	20.74	25.70
1606	2 x2	24.05	25.45	28.14	34.85

*I.P.S.

Brass Friction Rings



No.		Price per 100
2116	½″ I.P. Size x 7/16″ O.D. S.J. Nuts	$1.50
2111	½″ I.P. Size x ½″ O.D. S.J. Nuts	1.50
2112	½″ I.P. Size x 9/16″ O.D. S.J. Nuts	1.50
768	1¼″ I.P. Size x 1¼″ O.D. S.J. Nuts	2.25
7309	1½″ I.P. Size x 1¼″ O.D. S.J. Nuts	2.25
7310	1½″ I.P. Size x 1⅜″ O.D. S.J. Nuts	2.25
766	1½″ I.P. Size x 1½″ O.D. S.J. Nuts	2.25
764	2″ I.P. Size x 2″ O.D. S.J. Nuts	3.00



No. K-5505-A, with Cabinet **No. K-5500-A, Less Cabinet**

Wilshire Sinks with Cabinets

Sink, enameled cast iron, with two sink compartments, back ledge, square rim, cast-in soap dish, and right and left drainboards. Supported on wall hangers and steel cabinet.

Fittings, all-metal compression combination swing spout supply fitting with renewable seats, lever handles, escutcheons, transfer valve, rubber hose and spray; two 4-inch drain plugs with removable crumb cup, stopper, and 1½-inch tail-piece.

Traps, two 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

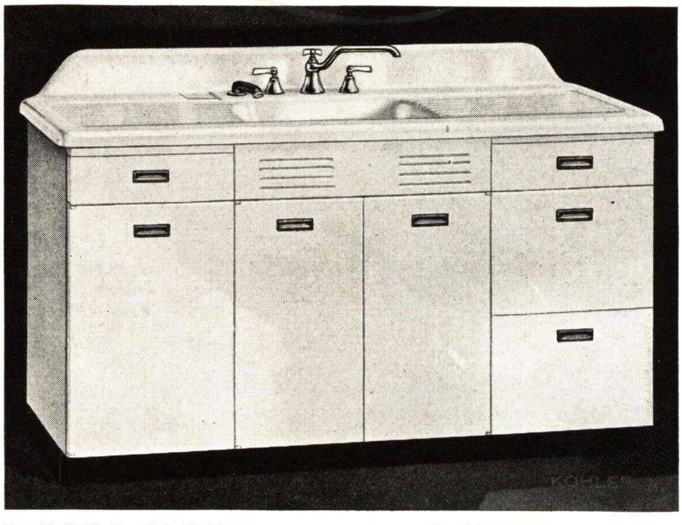
Cabinet, steel, baked gloss finish, has large center compartment under sink with louvre panel and two doors, also two storage bins and drawer and compartment arrangements under each drainboard.

Nominal Size	inches	72x25
Length Each Bowl	inches	16¼
Width of Bowl	inches	17¾
Depth of Bowl	inches	8
Length Each Drainboard	inches	18½
Height of Back	inches	4
Floor to Rim	inches	36
Approximate Shipping Weight, Sink Only	pounds	290
Approximate Shipping Weight, with Cabinet	pounds	560

Furnished in acid-resisting white or colored enamel.

Available with supply fitting less hose and spray.

Cabinets furnished with colored sinks are prime coated only unless otherwise specified. When specified, cabinets furnished can be in green, or ivory at same price as white.



No. K-5555-A, with Cabinet **No. K-5550-A, Less Cabinet**

Camberley Sinks with Cabinets

Enameled cast iron sink with back ledge, square rim, cast-in soap dish, and right and left drainboards. Supported on wall hangers and steel cabinet.

Fittings: All-metal compression combination swing spout supply fitting with renewable seats, lever handles, escutcheons, transfer valve, rubber hose, and spray; 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail-piece.

Trap: 1½-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

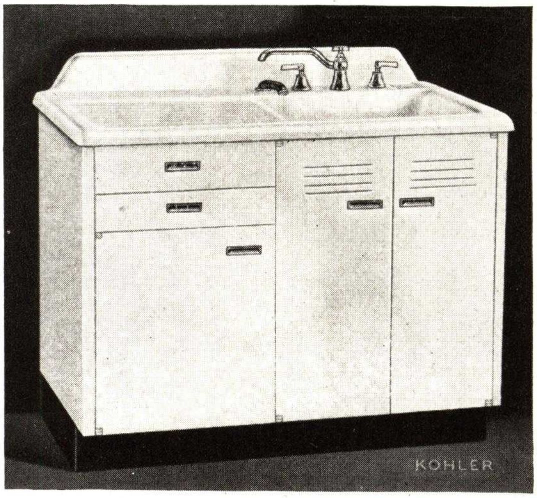
Cabinet: Steel, baked gloss finish, has large center compartment under sink with louvre panel and two doors, also drawer and compartment arrangements under each drainboard.

Nominal Size	inches	54x25	60x25
Length of Bowl	inches	20	20
Width of Bowl	inches	17¾	17¾
Depth of Bowl	inches	8	8
Length each Drainboard	inches	17	20
Height of Back	inches	4	4
Floor to Rim	inches	36	36
Approximate Shipping Weight, Sink Only	pounds	223	241
Approximate Shipping Weight, with Cabinet	pounds	421	476

Furnished in acid-resisting white or colored enamel.

Available with supply fitting less hose and spray.

Cabinets furnished with colored sinks are prime coated only unless otherwise specified.



No. K-5576-A, Sink at Right with Cabinet
No. K-5575-A, Sink at Left with Cabinet

Cymbria Sinks with Cabinets

Sink: Enameled cast iron, with back ledge, square rim, cast-in soap dish, and single drainboard. Wall hangers.

Fittings: Combination swing spout faucet with renewable seats, transfer valve, hose, and spray; 4-inch drain plug with cup strainer and stopper; 1½-inch P trap.

Cabinet: Steel, baked white gloss finish.

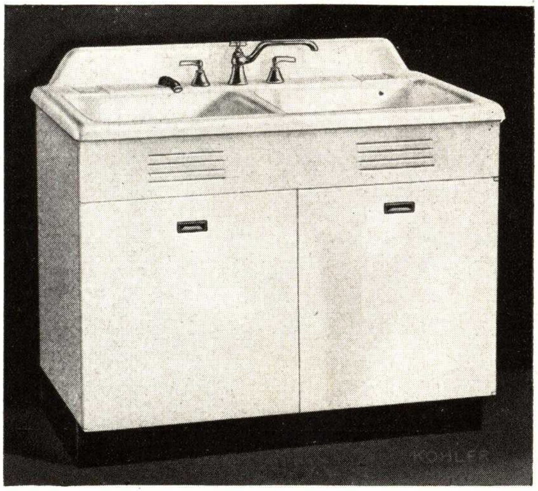
Nominal Size	inches	42x25
Length of Bowl	inches	18¾
Length of Drain Board	inches	21
Floor to Rim	inches	36
Approximate Shipping Weight, with Cabinet	pounds	297

Cabinets with colored sinks are regularly primed only.

Sinks in acid-resisting white or colored enamel.

No. K-5570-A, same as No. K-5576-A, except less cabinet.

No. K-5569-A, same as No. K-5575-A, except less cabinet.



No. K-5595-A, Sink with Cabinet
No. K-5590-A, Sink Less Cabinet

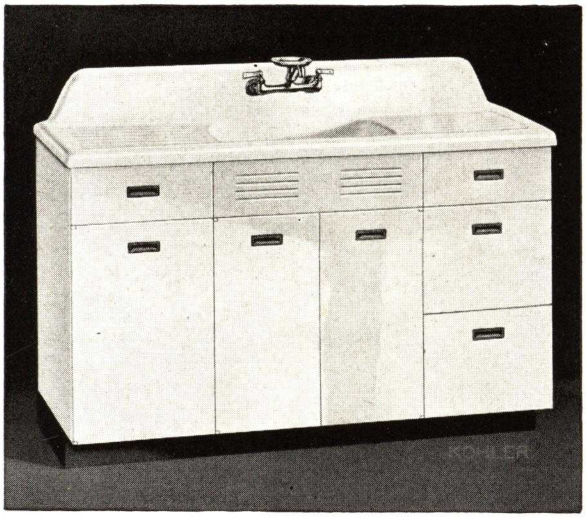
Wellwin Sinks with Cabinets

Sink: Enameled cast iron, with two sink compartments, back ledge, square rim, and cast-in soap dishes. Wall hangers.

Fittings: Combination swing spout faucet with renewable seats, transfer valve, hose, and spray; two 4-inch drain plugs with cup strainers and stoppers; two 1½-inch P traps.

Cabinet: Steel, baked white gloss finish, has storage compartment with louvre panel and two doors.

Nominal Size	inches	42x25
Each Sink Compartment, Inside	inches	17½x18
Depth of Sink	inches	8
Height of Back	inches	4
Floor to Rim	inches	36
Approximate Shipping Weight, with Cabinet	lb.	310



No. K-5705-A, with Cabinet **No. K-5700-A, Less Cabinet**

Doubleday Sinks with Cabinets

Sink: Enameled cast iron, with back, square rim and right and left drainboards. Supported on wall hangers and steel cabinet.

Fittings: All-metal compression combination swing spout supply fitting with renewable seats, lever handles, and flanges; 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail-piece.

Trap: 1½-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

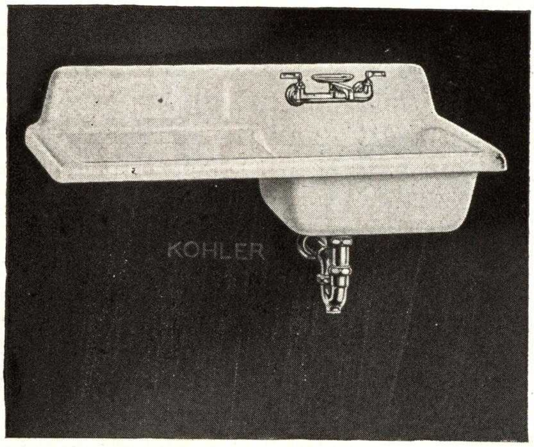
Cabinet: Steel, baked gloss finish, has large center compartment under sink with louvre panel and two doors, also drawer and compartment arrangements under each drainboard.

Nominal Size	inches	54x22	60x22
Length of Bowl	inches	20	22
Width of Bowl	inches	17¾	17¾
Depth of Bowl	inches	8	8
Length Each Drainboard	inches	17	19
Height of Back	inches	6½	6½
Floor to Rim	inches	36	36
Approximate Shipping Weight, Sink Only	pounds	165	180
Approximate Shipping Weight, with Cabinet	pounds	317	332

Furnished in acid-resisting white or colored enamel.

Available with supply fitting with hose and spray.

Cabinets furnished with colored sinks are prime coated only unless otherwise specified.



No. K-6080-A, Sink at Right
No. K-6079-A Sink at Left

Holiday Enameled Cast Iron Sink with back, roll rim with square corners, and single drainboard. Supported on concealed wall hangers.

Fittings: All-metal compression combination swing spout faucet with renewable seats, lever handles, and removable soap dish; 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail-piece.

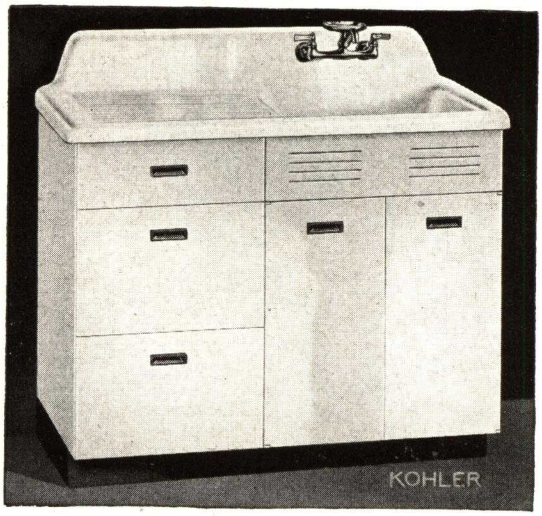
Trap: 1½-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	42x20
Length of Bowl	inches	18¾
Depth of Bowl	inches	8
Length of Drainboard	inches	21
Height of Back	inches	6½
Approx. Shipping Weight, less Fittings	pounds	148

Furnished in acid-resisting white or colored enamel.

For Metal or Wood Cabinet Installations



No. K-6086-A, Sink at Right with Cabinet
No. K-6085-A, Sink at Left with Cabinet

Holiday Sinks with Cabinets

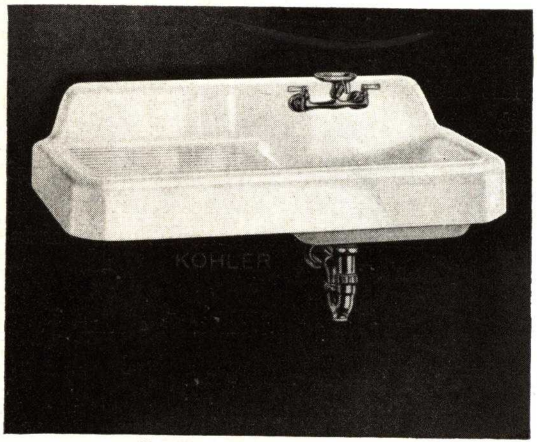
Sink: Enameled cast iron, with 6½-inch back, square rim, bowl 8-inches deep, and single drainboard. Supported on wall hangers.

Fittings: All-metal combination swing spout faucet with renewable seats, and removable soap dish; 4-inch drain plug with cup strainer, stopper, and 1½-inch P trap.

Cabinet: Steel, baked white gloss finish.

Nominal Size	inches	42x20
Length of Bowl	inches	18¾
Length of Drainboard	inches	21
Floor to Rim	inches	36
Approximate Shipping Weight with Cabinet	pounds	262

No. K-6080-A, same as No. K-6086-A, except less cabinet.
No. K-6079-A, same as No. K-6085-A, except less cabinet.



No. K-6150-A, Sink at Right
No. K-6149-A, Sink at Left

Rainier Enameled Cast Iron Sink with back, apron, left end piece, and single drainboard supported on concealed wall hangers.

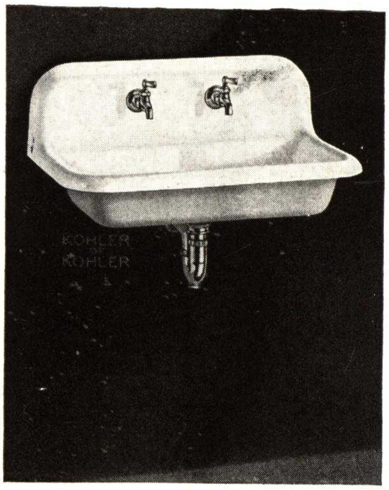
Fittings: All-metal compression combination swing spout faucet with renewable seats, lever handles, and removable soap dish; 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail piece.

Trap: 1½-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	42x20
Length of Bowl	inches	18¾
Depth of Bowl	inches	8
Length of Drainboard	inches	21¼
Height of Back	inches	6½
Approximate Shipping Weight, less Fittings	pounds	185

Furnished in acid-resisting white or colored enamel.



No. K-6325-C

Sutton Enameled Cast Iron Sink with back and roll rim Supported on concealed wall hanger.

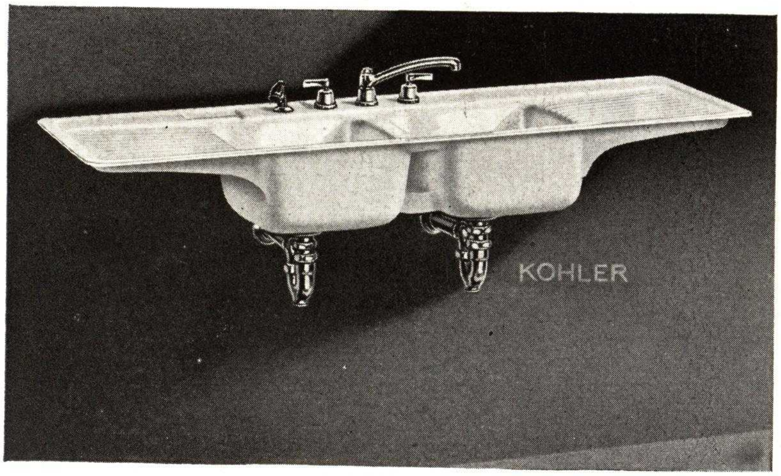
Fittings: Two ½-inch T-handle compression single faucets with adjustable threaded flanges, and 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail-piece.

Trap: 1½-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Size	inches	24x18	30x20
Height of Back	inches	8	8
Depth of Sink	inches	6	6
Approx. Ship. Wt., less Fittings	pounds	78	110

Furnished in acid-resisting white enamel.



No. K-6460-A

Clearfield Enameled Cast Iron Flat Rim Sink with two compartments, two drainboards, back ledge, cast-in soap dish, and center outlets. For building into counter tops of linoleum, tile or composition.

Made 21 inches wide to fit standard sized cabinets.

Fittings: Combination swing spout supply fitting with renewable seats, lever handles, escutcheons, hose and automatic spray, and two 4-inch drain plugs with removable cup strainers, stoppers and 1½-inch tail-pieces.

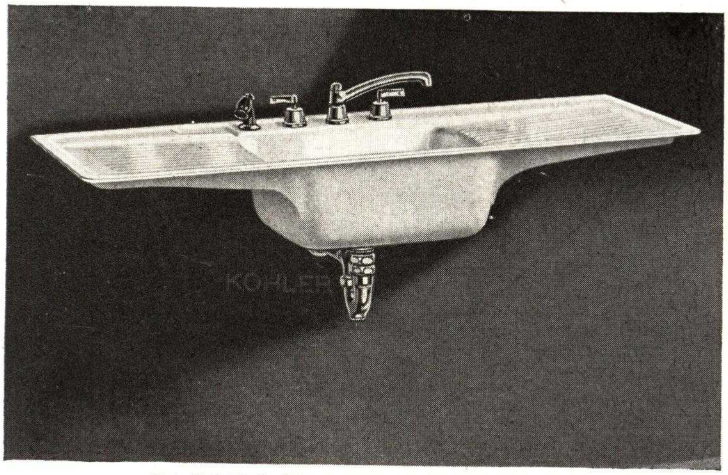
Traps: Two, 1½-inch P pattern with metal wall flanges.

Exposed Metal: Chromium plated.

Nominal Size	inches	60x21
Length Each Sink, Inside	inches	14
Width Each Sink, Inside	inches	15⅜
Length Each Drainboard	inches	14¾
Depth Each Sink	inches	8
Width Back Ledge	inches	3⅛
Approximate Shipping Weight	pounds	195

Clearfield sinks furnished only with supply fittings.

Furnished in acid-resisting white.



No. K-6470-A, Winfield Sink with 2 Drainboards

Winfield Enameled Cast Iron Flat Rim Sink with two drainboards, back ledge, cast-in soap dish, and center outlet. For building into counter tops of linoleum, tile, or composition.

Fittings: All-metal compression combination swing spout supply fitting with renewable seats, lever handles, escutcheons, hose and automatic spray, and 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail-piece.

Trap: 1½-inch P pattern.

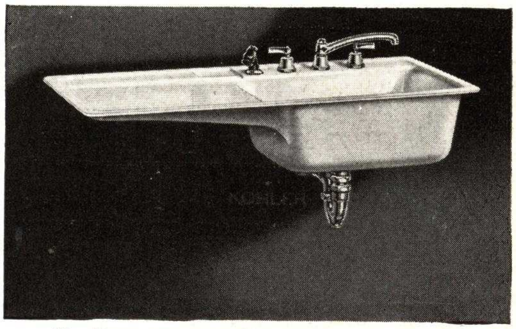
Exposed Metal: Chromium plated.

Chatfield, same as above except with single drainboard.

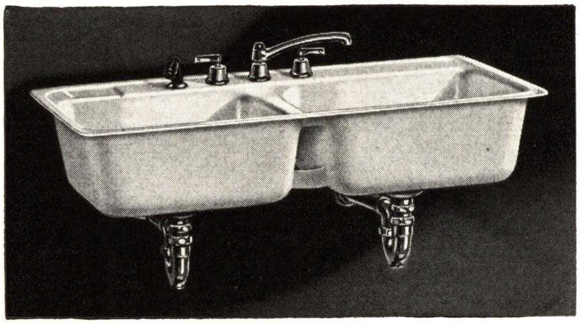
		Two Drainboards	Single Drainboard
Nominal Size	inches	54x21	42x21
Length of Sink, Inside	inches	18½	20
Width of Sink, Inside	inches	15⅜	15⅜
Length Each Drainboard	inches	17¾	20¾
Depth Sink	inches	8	8
Width Back Ledge	inches	3⅜	3⅛
Approximate Shipping Weight	pounds	180	135

Winfield and Chatfield sinks furnished only with supply fittings.

Furnished in acid-resisting white.



No. K-6480-A, Chatfield with Sink at Right
No. K-6479-A, Chatfield with Sink at Left



No. K-6490-A

Delafield Enameled Cast Iron Flat Rim Sink with two compartments, back ledge, cast-in soap dish, and center outlets. For cabinet installations.

Fittings: All-metal compression combination swing spout supply fitting with renewable seats, lever handles, escutcheons, hose and automatic spray; two 4-inch drain plugs with removable cup strainers, stoppers, and 1½-inch tailpieces.

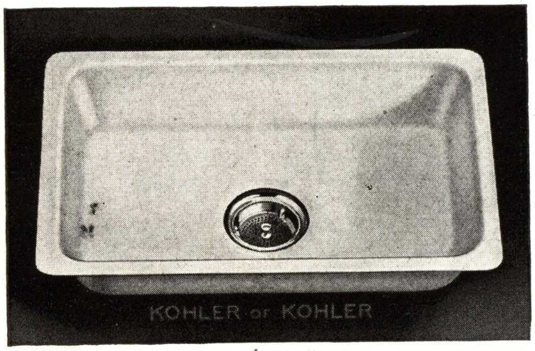
Traps: Two 1½-inch P pattern with metal wall flanges.

Exposed Metal: Chromium plated.

Nominal Size	inches	32x21	42x21
Length Each Compartment Inside	inches	13½	18½
Width Each Compartment Inside	inches	15½	15½
Depth of Sinks	inches	8	8
Width of Ledge	inches	3⅛	3⅛
Approx. Ship. Wt., less Fittings	pounds	103	130

Delafield sinks furnished only with supply fittings.

Furnished in acid-resisting white or colored enamel.



No. K-6550-A

Addison Enameled Cast Iron Flat Rim Sink with center outlet and 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail-piece.

Exposed Metal: Chromium plated.

Size	in.	12x12	30x18	24x20	30x20
Depth of Sink	in.	6	6	6	6
Approx. Ship. Wt., less Strainer	lb.	30	53	54	60

Furnished in acid-resisting white or colored enamel.

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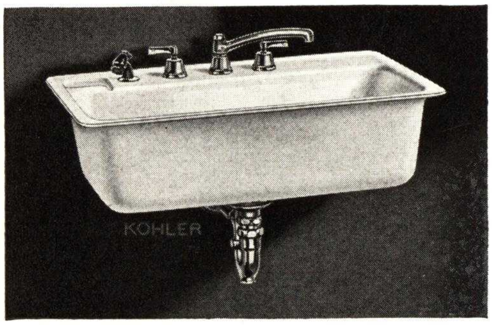


No. K-6510-A

Mayfield Enameled Cast Iron Flat Rim Sink with 3-inch back ledge, cast-in soap dish, and center outlet.

Fittings: Combination supply fitting with hose and automatic spray; 4-inch drain plug with cup strainer and stopper and 1½-inch tail-piece.

Trap: Not furnished.

Exposed Metal: Chromium plated.

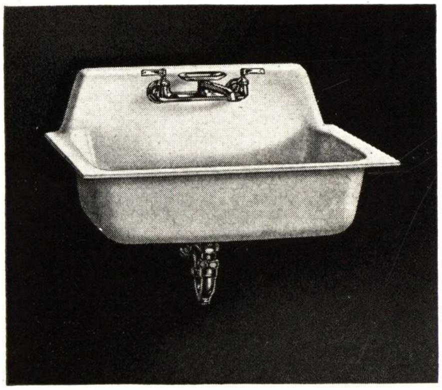
Nominal Size	inches	24x21	30x21
Length Inside	inches	21½	27½
Width Inside	inches	15½	15½
Depth of Sink	inches	8	8
Width of Ledge	inches	3⅛	3⅛
Approx. Ship. Wt., less Fittings	pounds	76	96

Available with supply fitting less hose and spray.

Furnished in acid-resisting white or colored enamel.

Mayfield sinks furnished only with supply fittings.

For Cabinet Installations



No. K-6310-A

Alameda Enameled Cast Iron Sink with back and extended flat rim for tiling-in. Supported on concealed wall hangers.

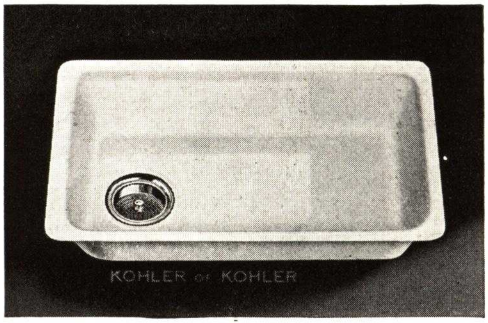
Fittings: All-metal compression combination swing spout faucet with renewable seats, lever handles, and removable soap dish; 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail-piece.

Trap: 1½-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Nominal Size	inches	24x20	30x20
Depth of Sink	inches	8	8
Height of Back	inches	6½	6½
Approx. Ship. Wt., less Fittings	pounds	97	100

Furnished in acid-resisting white or colored enamel.

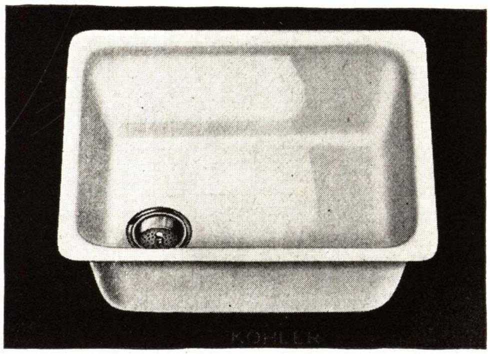


No. K-6570-A

Fentress Enameled Cast Iron Flat Rim Sink with end outlet, chromium-plated 4-inch drain plug with removable cup strainer, stopper, and 1½-inch tail-piece. Depth, 6 inches.

Size Inches	Approx. Ship. Wt. Lb.	Size Inches	Approx. Ship. Wt. Lb.	Size Inches	Approx. Ship. Wt. Lb.
18x12	32	24x16	43	30x18	53
20x14	30	24x18	48	30x20	60
20x16	39	24x20	54	.....	..

Furnished in acid-resisting white or colored enamel.

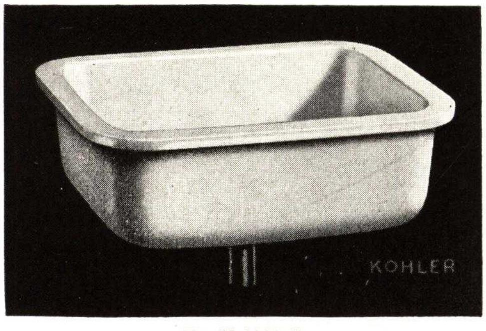


No. K-6591-A

Ansdell Enameled Cast Iron Flat Rim Tray Sink with overflow, end outlet, chromium-plated 4-inch drain plug with removable cup strainer and 1½-inch tail-piece.

Nominal Size	inches	24x20
Depth of Sink	inches	9½
Approximate Shipping Weight, less Strainer	pounds	75

Furnished in regular white and acid-resisting white or colored enamel.



No. K-6920-A

Anerley Vitreous China Flat Rim Sink with center outlet. For cabinet installations.

FITTINGS: 4-inch drain plug with Duostrainer and 1½-inch tail-piece.

EXPOSED METAL: Chromium plated.

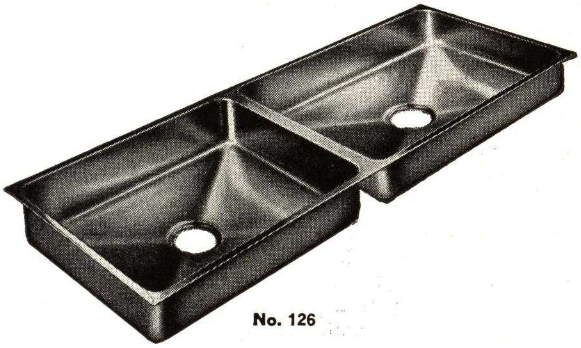
Nominal Size	inches	20x18	24x18
Depth of Sink	inches	6½	6½
Approx. Ship. Wt., less Strainer	pounds	42	44

Furnished in white only.

Kitchen Cabinets

Ask us for information about kitchen base units and wall cabinets.

Many attractive kitchen layouts may be assembled from stock patterns and sizes.



No. 126

Elkay Sturdibilt Stainless Steel Flat Rim Double Sink Bowl with rounded corners and outlets drilled for 3½-inch crumb cup strainers. Made 18-gage thickness throughout. Depth sink, 7½ inches.

Inside Dimen. Inches	Outside Dimen. Inches	Ship. Weight Pounds	Inside Dimen. Inches	Outside Dimen. Inches	Ship. Weight Pounds
14x30	16x32	40	18x42	20x44	50
16x34	18x36	40	18x52	20x54	60
18x34	20x36	45	18x62	20x64	65
18x38	20x40	45	.....	.....	..

Can also furnish special sizes custom built to meet special conditions.

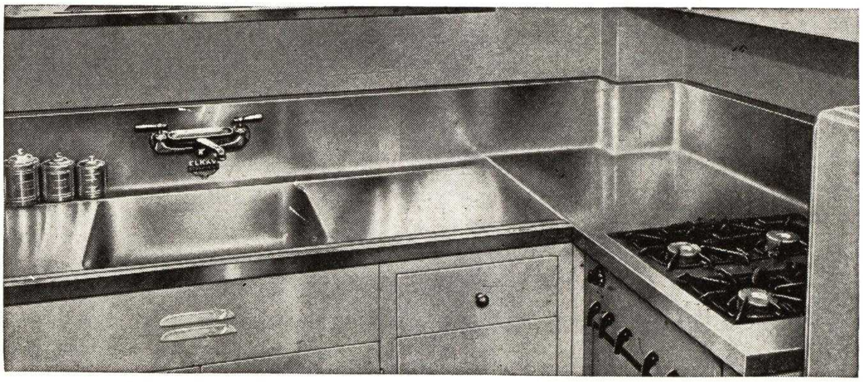
No. D-111

Elkay Sturdibilt Stainless Steel Flat Rim Sink Bowl with rounded corners and outlet drilled for 3½-inch crumb cup strainer. Made 18-gage thickness throughout. Depth sink, 7½ inches.

Inside Dimen. Inches	Outside Dimen. Inches	Ship. Weight Pounds	Inside Dimen. Inches	Outside Dimen. Inches	Ship. Weight Pounds
12x18	13¼x19¼	20	16x24	17¼x25¼	30
12x20	13¼x21¼	23	16x30	17¼x31¼	32
14x16	15¼x17¼	20	18x20	19¼x21¼	28
14x20	15¼x21¼	25	18x25	19¼x26¼	32
14x24	15¼x25¼	28	18x30	19¼x31¼	35

Can also furnish special sizes custom built to meet special conditions.

The Kitchen Sink of Today



Chief among the many new improvements and refinements in the kitchen today is the **Elkay Lustertone 18-Gage Stainless Steel Kitchen Sink.** Made of the finest quality stainless steel its acid and stain resisting qualities assure a lifetime of service, cleanliness, and beauty.

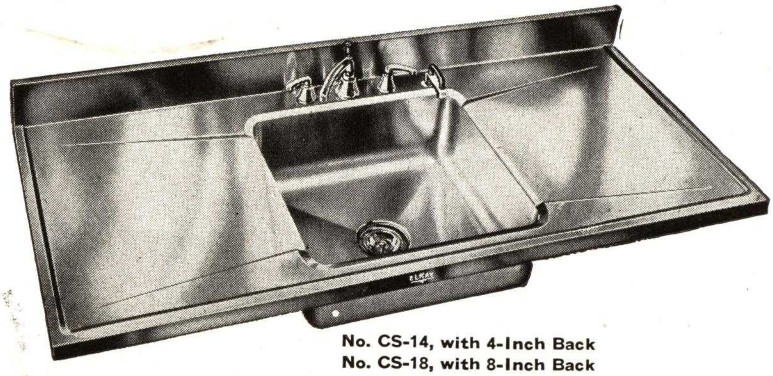
Stainless steel is absolutely chip and crack-proof. Its silvery surface is not affected by fruit, meat or vegetable acids or stains. Just a light wiping with a damp cloth will immediately remove all spots and stains and again leave its surfaces spotlessly clean and sanitary.

The **Elkay Lustertone** sink is custom-built according to architect's or builder's specifications to meet the individual requirements of the home owner.

The extra heavy, stainless steel sink and top are electrically welded into one integral unit. There are no joints, cracks or seams to come apart and permit water, fruit and vegetable acids and other fluids to seep through and rust or weaken the supporting structure of flow into cabinet drawers. There are no crevices where particles of food may squeeze in, there to decay and give off unpleasant odors.

The **Elkay Lustertone Stainless Steel Kitchen and Cabinet Sink** is adaptable to any size and shape of kitchen or pantry and can be fitted over either steel or wood cabinets.

Up-to-Date Bulletins and Complete Information Furnished Upon Request



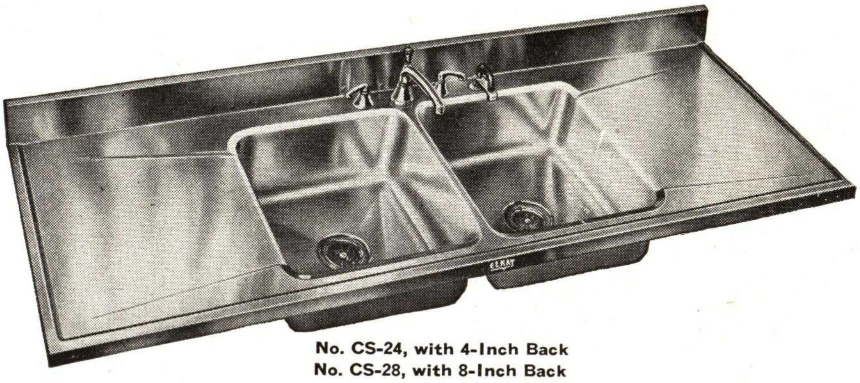
No. CS-14, with 4-Inch Back
No. CS-18, with 8-Inch Back

Elkay Lustertone Stainless Steel Cabinet Sink with 4-inch back splasher and right and left pitched drainboards.

Fittings: Quick compression combination swing spout sink faucet with metal lever handles, removable soap dish and 3½-inch Stainless-Steel. Duo crumb cup, removable strainer.

		*With 4-Inch Back	*With 8-Inch Back
Nominal Size	inches	60x25	60x25
Length Overall	inches	60	60
Width Overall	inches	25	25
Length of Bowl	inches	20	20
Width of Bowl (Front to Back)	inches	18	18
Depth of Bowl	inches	7½	7½
Length Each Drainboard	inches	20	20
Height of Back	inches	4	8
Approximate Shipping Weight less Fittings	pounds	140	150

*Can be supplied in any size with either one or two bowls and either left or right drainboards, also with back splasher of any height and both right and left return ends if desired.



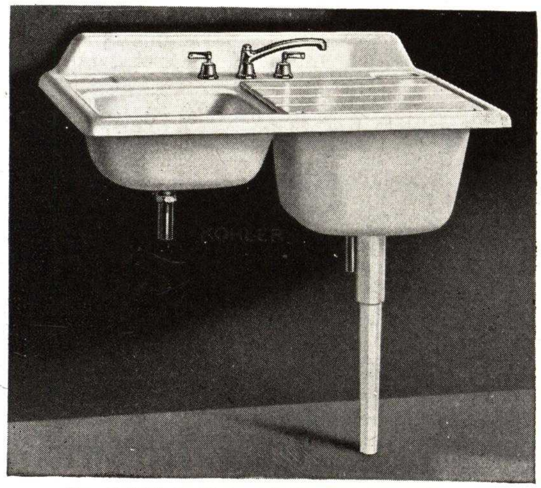
No. CS-24, with 4-Inch Back
No. CS-28, with 8-Inch Back

Elkay Lustertone Stainless Steel Two-Compartment Cabinet Sinks with right and left double pitched drainboards. Supported on cabinets and concealed wall hangers.

FITTINGS: Quick compression swing spout sink faucet with metal lever handles and removable soap dish. One 3½-inch Stainless-Steel Duo crumb cup, removable strainer in each compartment.

		*With 4-Inch Back	*With 8-Inch Back
Nominal Size	inches	72x25	72x25
Length Each Bowl	inches	16	16
Width Each Bowl (Front to Back)	inches	18	18
Depth Each Bowl	inches	7½	7½
Length Each Drainboard	inches	19	19
Height of Back	inches	4	8
Approximate Shipping Weight less Fittings	pounds	168	180

*May be furnished in longer sizes if specified. Can be furnished in different size double bowl if required.



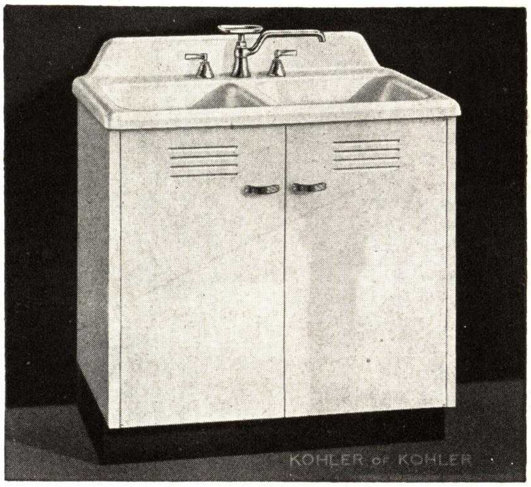
No. K-6609-A, Sink at Left and Tray at Right
No. K-6610-A, Sink at Right and Tray at Left

Sea Cliff Enameled Cast Iron Ledge Sink and Laundry Tray with Movable Cover with 4-in. back, back ledge, and roll rim. Supported on enameled adjustable leg and wall hangers.

FITTINGS: All-metal built-in compression combination supply fitting with renewable seats, lever handles, swing spout, 4-inch drain plug with removable cup strainer and stopper in sink, and 2-inch drain plug with stopper in tray. Trap not furnished.

Nominal Sizes	inches	36x25	42x25	50x25
Lgth. Each Compartment, Inside	in.	14½	17½	21½
Depth Sink, Inside	inches	8	8	8
Width of Ledge	inches	3⅜	3⅜	3⅜
Depth Tray, Inside	inches	13	13	13
Floor to Rim	inches	36	36	36
Approx. Ship. Wt.	pounds	200	238	290

Furnished only in acid-resisting white or colored enamel.



No. K-6607-A, Sink at Left and Tray at Right
No. K-6608-A, Sink at Right and Tray at Left

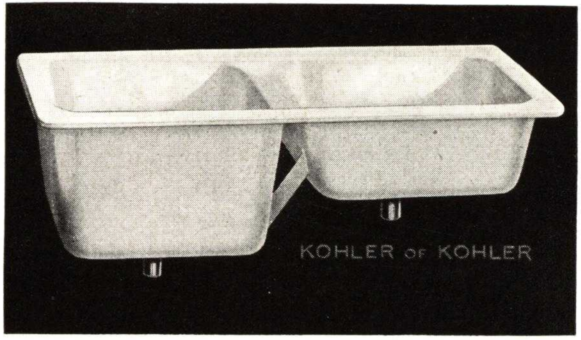
Sea Cliff Sink and Tray Combinations and Cabinets

SINK: Enameled cast iron, with sink and tray compartments, ledge back, and roll rim. Supported on wall hangers.

FITTINGS: Swing spout faucet with renewable seats, metal lever handles, and removable soap dish; 4-inch drain plug with crumb cup and stopper in sink and 2-inch drain plug with rubber stopper in tray.

CABINET: Steel, baked white gloss finish.

Nominal Size	inches	36x25	42x25	50x25
Lgth. Each Compartment, Inside	in.	14½	17½	21½
Depth Sink, Inside	inches	8	8	8
Depth Tray, Inside	inches	13	13	13
Height of Back	inches	4	4	4
Floor to Rim	inches	36	36	36
Approx. Ship. Wt., with Cabinet	lb.	305	351	408



No. K-6635-A

Alloway Enameled Cast Iron Sink and Tray Combination in one piece with flat rim, center outlets, and painted outside. Reversible, permitting of installation with sink or tray on right or left, as desired.

FITTINGS: 4-inch drain plug with cup strainer and metal stopper in sink, and 1½-inch drain plug with stopper in tray.

TRAP: Not furnished.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	42x20
Length, Tray Inside	inches	18½
Length, Sink Inside	inches	18½
Depth Tray	inches	13
Depth Sink	inches	8
Approximate Shipping Weight	pounds	190

Furnished acid-resisting white or colored enamel.

No. K-6712

Kohler Enameled Cast Iron Adjustable Sink Legs

No. K-6712—leg for end of apron sink.

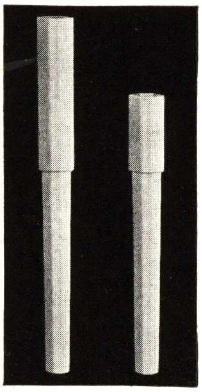
No. K-6730—leg for under sink compartment of sink and trays.

No. K-6731—leg for under tray compartment of sink and trays.

No.	K-6712	K-6730	K-6731
Wt. Pr. ...lb.	15	30	25

Adjustable, 32 to 36 in. floor to top of rim.

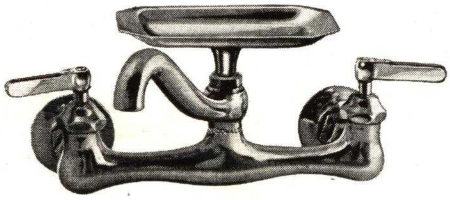
Furnished painted, regular white, and acid resisting colored enamel.



No. K-6730 No. K-6731

McDonald Combination Sink Faucets

Diamond Line



Chromium plated all-metal combination sink faucet with goose neck swinging spout equipped with anti-splash, metal lever handles, removable soap dish, and eccentric union couplings.

For ½-inch iron pipe. Flanges are adjustable 7¾ to 8¼ inches.

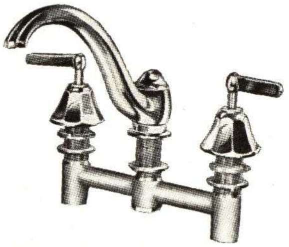
No. E-3409-F, with eccentric female flanges.
No. E-3409-M, with eccentric male flanges.

McDonald Ledge Type Swing Spout Combination Sink Faucets

Diamond Line

For Ledge Type Sinks and Table Top Installations

No. E-3414



Adaptable for use on sinks or counters up to 2 inches thick. Body is of one-piece construction and measures 8 inches center to center. Lever type handles. Anti-splash non-drip spout. Spout discharge is 10 inches above bottom of 6-inch deep sink. For ½-inch iron pipe connections.

Furnished without hose and spray.

Chromium plated brass.

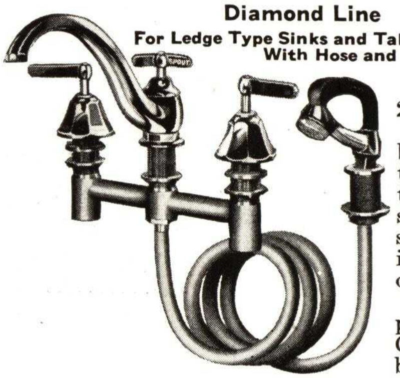
No. E-3414-S

Same as above except with soap dish.

No. E-3415 McDonald Ledge Type Swing Spout Combination Sink Faucets

Diamond Line

For Ledge Type Sinks and Table Top Installations
With Hose and Spray



For sinks up to 2 inches thick.

Has one-piece body, 8 inches center to center. Lever type handles. Anti-splash non-drip spout, discharges 10 inches above bottom of 6-inch deep sink.

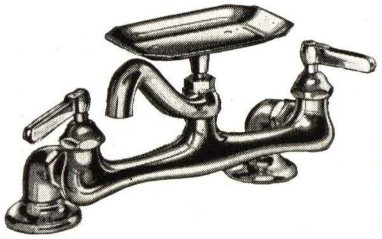
For ½-inch iron pipe connections. Chromium plated brass.

McDonald Swing Spout Combination Sink Faucets

Diamond Line

For Ledge Type Sinks and Table Top Installations

No. E-3413-F



Has female flanges, and elbow connections.

For ½-inch iron pipe. Lever type handle. Spout discharge is 11 inches above bottom of sink 6 inches deep.

Furnished with 8-inch straight spout when specified.

Chromium plated brass.

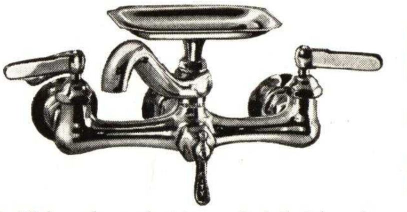
No. E-3418-F

Same as above except unit is for three water supply.

McDonald Swing Spout Combination Sink Faucets

Diamond Line

For Three Water Supply



For ½-inch iron pipe. Flanges are adjustable 7¾ to 8¼ inches.

Lever type handles.

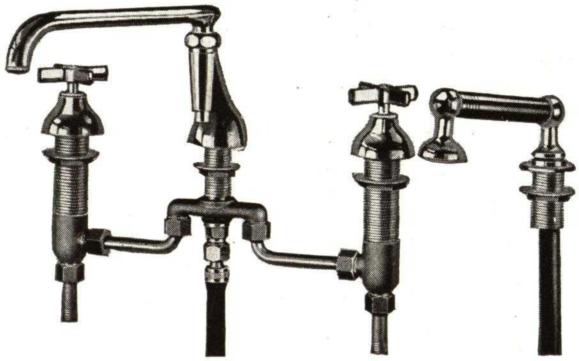
Spout equipped with anti-splash feature.

Spout discharge is 12 in. above bottom of sink 6 in. deep with 8-in. back. Can be furnished with 8-in. straight spout when specified.

No. E-3400-F—Has eccentric female flanges.
No. E-3400-M—Has eccentric male flanges.
Chromium plated brass.

No. 739A Chicago Shelf-Type Double Sink Faucets

With Spray Attachment and Transfer Valve

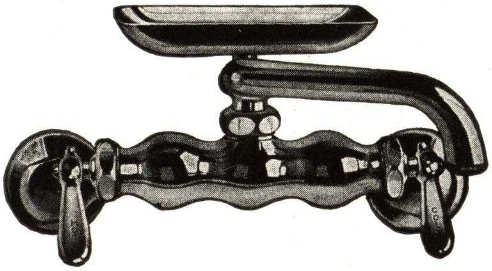


Shelf-type double sink faucet with push button automatic transfer valve, hose and spray attachment, elevated swing spout, built-in-compression valves with renewable metal seats, cross handles, escutcheons, and ¼-inch I.P.T. tail pieces.

Exposed metal chromium-plated.

No. **739A**..each .....

No. 444 Quaturn Classic Sink Faucets

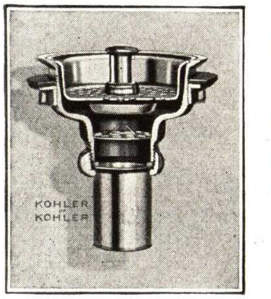


Chromium-plated sink faucet with overhead swing spout, metal lever handles, and metal soap dish. All wearing parts renewable including monel metal seats.

No. **444**, As Described	each	.....
No. **444**, Less Soap Dish	each	.....
No. **444**, With Integral Stops in Arms	each	.....

No. K-9101 Duostrainer Sink Strainers

For Sinks with 4-Inch Outlet



Chromium-plated sink strainer with removable cup and 1½-inch O.D. tubing tail-piece.

The sink equipped with the Duo-strainer has the following advantages:

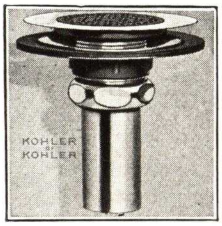
Holds water so it can be used for washing dishes, vegetables, and fruit.

Water flows rapidly from sink when cup strainer is raised.

Solid matter gathers in the cup strainer ready to be emptied.

The 4-inch opening in cup strainer permits fast draining of water from sink, making it practically self-cleansing.

No. K-**9101**..each .....



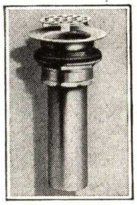
No. K-9107 Altern Sink Strainers

For Sinks with 4-Inch Outlets

Chromium-plated flat sink strainer with 1½-inch O.D. tubing tail-piece.

Has twice the draining area of a 2-inch strainer.

No. K-**9107**............each ....



No. K-9120

Regular Sink Strainers

For Sinks with 2-Inch Outlet

No. K-9120

Chromium-plated flat sink strainer with 1½-inch O.D. tubing tail-piece.

No. K-**9120**........................each ....

No. K-9121

Same as above except with stopper.

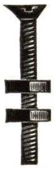
No. K-**9121**........................each ....

No. 4415 Brass Open Sink Strainers

For old style sinks having horn outlet.

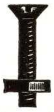
Outside Diameter	inches	**4½**	**4⅝**
No. **4415**, Nickel Plated	each	....	....
No. **4415**, Chromium Plated	each	....	....

No. 4420 Sink Bolts



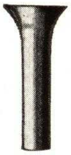
Long

	Per Dozen Iron	Per Dozen Brass
Long, with Two Iron Nuts	....	....
Short, with One Iron Nut	....	....
Add for C.P. Heads	....	....



Short

No. 415 Wrought Brass Sink Connections

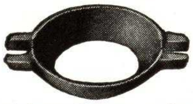


Satin finish.

Slip	inches	**1¼x4**	**1½x4**
No. **415**	each	......	.....
Gage No.		22	22

No. E-4895 McDonald Sink Collars

For Lead Pipe

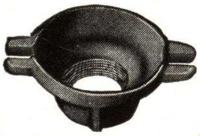


When used with cast iron traps, order one size larger than trap.

Sizes: 1¼, 1½ and 2 inches.

No. E-4896 McDonald Sink Collars

For Iron Pipe



Sizes: 1¼, 1½ and 2 inches.

New Diamond Adjustable Sink Brackets

With Wrought Hooks to Hold Sink

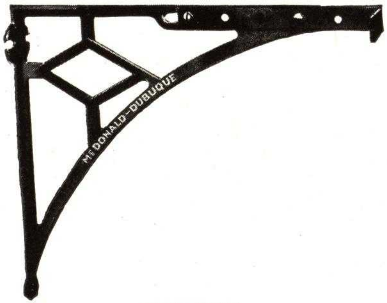


Plate E4891

These brackets are suitable for sinks from 16 to 22 inches wide. They have adjustable wrought hooks, which extend in front of the sink holding it in position against the wall. They are much easier to install as the hooks make it unnecessary to drill the rim of sink to fasten it to the brackets.

Price, Plain or Painted........................per pair **$1.20**

Diamond Combination Sink Brackets

Leg to Floor or Bracket to Wall For Flat Rim Sinks

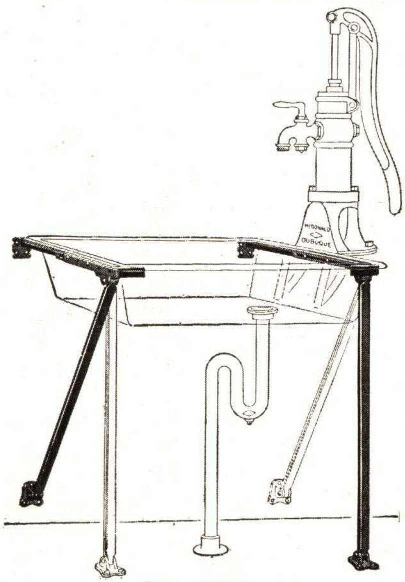


Plate E4882

The heavy or shaded parts of the illustration show our Diamond combination sink bracket and leg, for use with flat rim sinks. Made from strong mixture of cast iron, cast T shape, the arms and extension pieces are substantial and rigid.

These are now furnished with adjustable wrought hooks which are bolted to the horizontal arms. These hooks engage the front of the sink below the rim and hold it to the wall, so that it is not necessary to drill the rim of the sink as was formerly the case. Adjustable to sinks from 16 inches to 22 inches wide. Top of side rail, 31¼ inches from floor when used as leg.

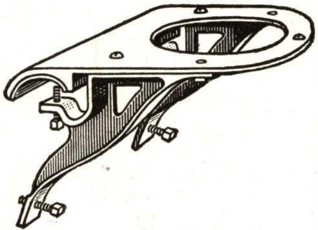
Being **Hinged** at both ends of the leg or supporting arm, they can be used as legs or wall brackets as shown.

This bracket permits the use of the pump bracket.

Price, Painted	per pair	**$1.50**
" " White Enamel	"	**2.25**
" Galvanized	"	**2.25**

Diamond Kitchen Sink Pump Brackets

To Attach Pitcher Spout and Small House Force Pumps to Flat or Roll Rim Sinks



No. E4881

This pump bracket, attached to any roll rim or flat rim sink, avoids the use of an unsanitary wooden shelf. Thin pieces of leather or rubber placed under bracket prevent damage to the sink rim. By adjusting the two set screws in the lower extension arms, the surface of the bracket can be brought to a satisfactory level, regardless of irregularities or unevenness of side of sink.

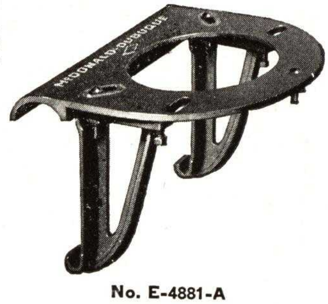
Pitcher spout pumps Nos. 1, 2 and 3 and house force pumps with bases the same as on pitcher spout pumps, will fit on these brackets. **Neat, Simple, Compact** and **Strong.** Furnished either painted, galvanized, painted white enamel or porcelain enameled.

Painted	each	......
Galvanized	each	......
Painted White Enamel	each	......
Porcelain Enameled	each	......

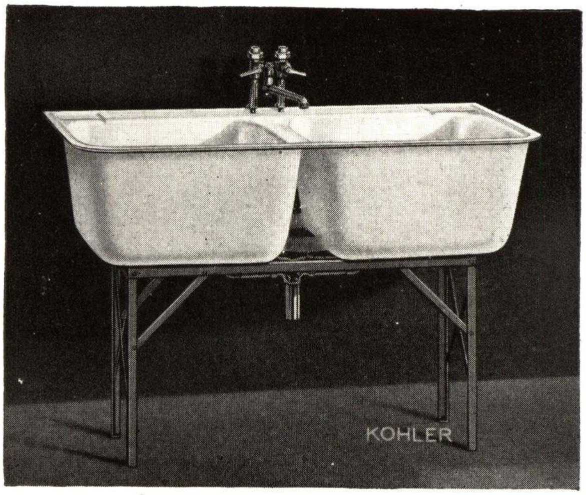
Pump Bracket to Attach to Apron Sinks

This pump bracket can be attached to any apron sink, so that a No. 2 or 3 pitcher spout pump, or house force pump with base same as pitcher spout pumps can be mounted on them. Easy to attach.

Painted	each	......
Galvanized	each	......
Painted White Enamel	each	......
Porcelain Enameled Shelf	each	......



No. E-4881-A



No. K-6750-A

Twin Falls Enameled Cast Iron One-Piece Double Compartment Shelf Laundry Trays with flat rim, two cast-in soap dishes, and painted outside. Supported on painted black angle iron frame.

FITTINGS: Compression swing spout faucet with metal lever handles and tray faucet bracket; continuous drain with two 1½-inch drain plugs with stoppers and tail pieces.

Length Over Rim	inches	48
Width Over Rim	inches	25
Length Inside, Each Section	inches	21½
Front to Back Inside	inches	19¾
Depth Inside	inches	13
Width of Ledge	inches	3½
Height from Floor	inches	34
Approx. Shipping Weight	pounds	250

Furnished in acid-resisting white enamel only.

KOHLER OF KOHLER

No. K-6800-M

Patten Enameled Cast Iron Laundry Tray with two compartments, back, and roll rim. Supported on concealed wall hangers and painted adjustable legs.

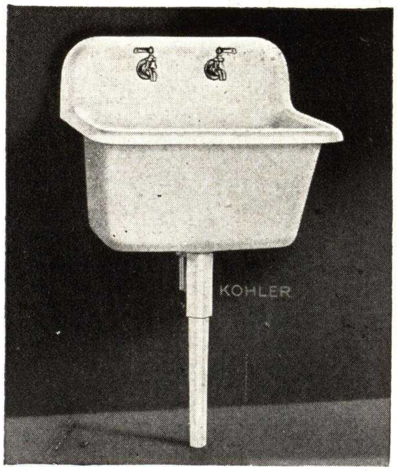
Fittings, compression swing spout faucet with metal lever handles, and two 1½-inch drain plugs with rubber stoppers and tail-pieces.

Trap, not furnished.

Exposed metal chromium-plated.

Length Over All	inches	52¾
Width Over All	inches	26⅝
Length Inside, Each Section	inches	23
Front to Back, Inside	inches	21¼
Depth Inside	inches	14¼
Height of Back	inches	8
Floor to Top of Rim, Adjustable	inches	33 to 37
Approx. Shipping Weight, less Fittings	pounds	400

Furnished enameled inside, painted outside.
Furnished in acid resisting white enamel.



No. K-6815-A

Stanwix Enameled Cast Iron Laundry Tray with back, and roll rim. Supported on concealed wall hangers and painted adjustable leg.

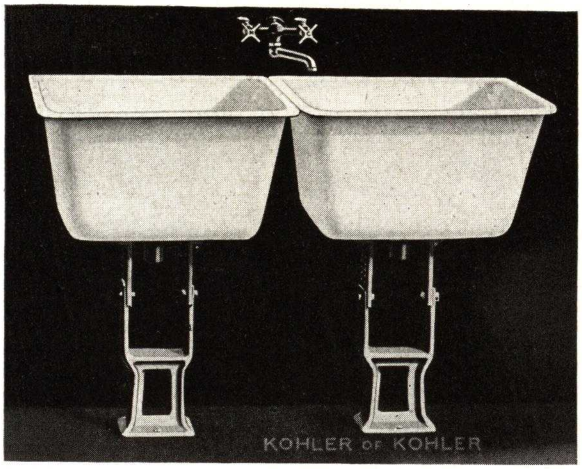
FITTINGS: Compression faucets with metal lever handles, and 1½-inch drain plug with stopper and tailpiece.

TRAP: Not furnished.

Length Overall	inches	27½
Width Overall	inches	26¾
Length Inside	inches	22¾
Front to Back, Inside	inches	22½
Depth Inside	inches	14¼
Height of Back	inches	8
Floor to Top of Rim, Adjustable	inches	34 to 36
Approx. Shipping Weight, less Fittings	pounds	235

Furnished enameled inside, painted outside.

Furnished in acid-resisting white enamel only.



No. K-6865-A

Emery Enameled Cast Iron Laundry Trays, two sections, with flat rim and painted outside. Supported on painted adjustable pedestals.

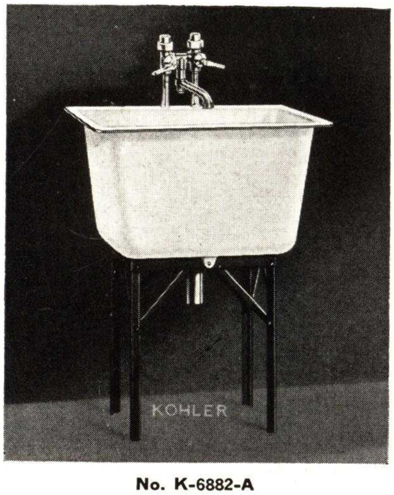
Fittings, compression swing spout faucet with metal cross handles, wall faucet bracket, and two 1½-inch drain plugs with rubber stoppers and tail-pieces.

Trap, not furnished.

Exposed metal chromium plated.

Length Over All, Two Sections	inches	48
Width Over All	inches	20
Length Inside, Each Section	inches	21¼
Front to Back, Inside	inches	17¼
Depth Inside	inches	13¼
Floor to Top of Rim, Adjustable	inches	29 to 33
Approximate Shipping Weight, Two Sections, less Fittings	pounds	200

Furnished in acid-resisting white enamel.



No. K-6882-A

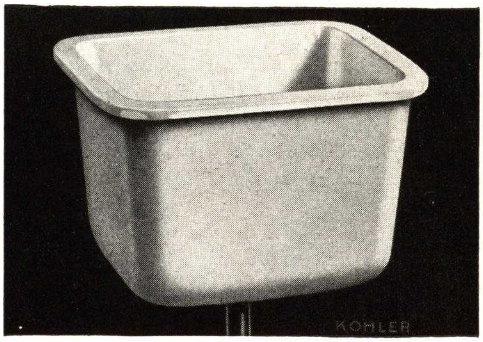
Elswick Enameled Cast Iron Laundry Tray with flat rim and painted outside. Supported on painted black angle iron frame.

FITTINGS: Compression swing spout faucet with metal lever handles and tray faucet bracket; 1½-inch drain plug with stopper and tail-piece.

Length Over Rim	inches	24
Width Over Rim	inches	20
Length Inside	inches	21¼
Front to Back Inside	inches	17¼
Depth Inside	inches	13¼
Height from Floor	inches	34
Approx. Shipping Weight	pounds	97

If specified can be furnished drilled for and with hardwood wringer holder at added cost.

Furnished in acid-resisting white enamel only.



No. K-6935-A

Anston Vitreous China Flat Rim Laundry Tray with center outlet. For cabinet installations.

FITTINGS: 2-inch drain plug with stopper and 1½-inch tail-piece.

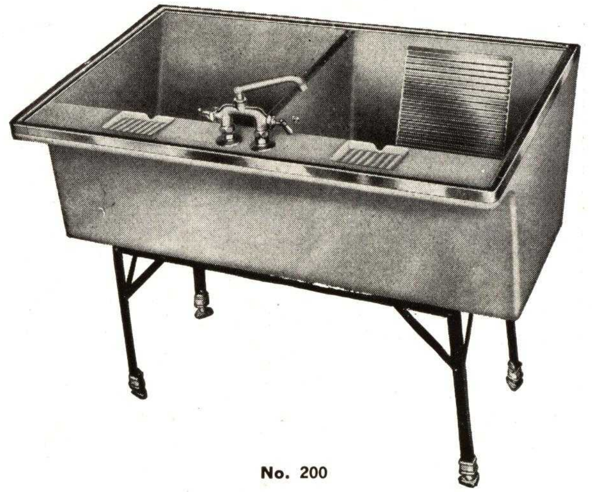
EXPOSED METAL: Chromium plated.

Nominal Size	inches	20x18
Depth of Tray	inches	12
Approx. Ship. Wt., less Strainer	pounds	46

Furnished in white only.

Another McDonald Catalog

Ask for your copy of the complete catalog of Plumbers' Brass Goods.



No. 200

Shelfon Laundry Tray, cast in one piece with 6-inch integral shelf with 2 depressed soap dishes. Permanent rustless metallic washboard is cast in left hand compartment.

Supported on enameled steel stand. Stand has lightning levelers, permitting rapid, easy leveling of tray on sloping floor.

Furnished with threaded twin drain connection, moulding type round cornered metallic rim, brass strainers and rubber plugs. Polished stainless steel rim and washboard can be furnished at additional cost.

No.	100	200	300
No. of Compartments	1	2	3
Length . . . inches	25	48	72
Width . . . inches	24	24	24
Depth . . . inches	16	16	16
Weight . . . pounds	200	400	600

Granitine Laundry Tray, cast in one piece, reinforced. Has molding type round cornered metallic rim, brass strainers, rubber stoppers, threaded twin drain connection.

Supported on enameled angle steel stand.

No.	2	3	4	6	7	8	10	11	12
No. of Compartments	1	1	1	2	2	2	3	3	3
Length . . . inches	25	27	31	48	54	60	72	80	90
Width . . . inches	24	24	24	24	24	24	24	24	24
Depth . . . inches	16	16	16	16	16	16	16	16	16
Weight . . . pounds	175	200	225	350	375	400	550	600	700

Stand, faucet, trap, and plug chains extra.

Herculite Shelf Laundry Trays

No. 200

Herculite Shelf Laundry Tray, cast all in one piece, with 6-inch integral shelf and soap dishes. Metallic washboard of rustless metal is cast in left hand compartment. Supported on enameled steel stand. Stand has leveling screws permitting rapid, permanent, leveling of tray.

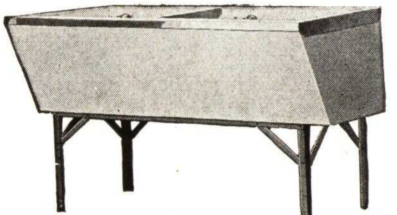
Regularly furnished with threaded twin waste connection, rubber plugs, and faucet anchor.

Faucet anchor furnished so that any top supply swing faucet can be used.

Width, 24 inches.

Depth, 16 inches.

No.	100	200	300
Each	...	...	...
No. of Sections	1	2	3
Length . . . inches	25	48	72
Weight . . . pounds	220	360	570



No. 6

Wessels Concrete Laundry Tray without Back integrally cast in one piece, with metallic rim, threaded waste connection, rubber stopper. Steel frame can be supplied.

All trays have faucet holes partly drilled.

No.	Each	Length Inches	Width Inches	Depth Inches	Approximate Shipping Weight Lb.
		1-Part Tray			
2	......	25	24	16	215
3	......	27	24	16	235
4	......	30	24	16	255
		2-Part Tray			
6	......	48	24	16	350
7	......	54	24	16	370
8	......	60	24	16	400
		3-Part Tray			
10	......	72	24	16	550

McDonald Swing Spout Double Laundry Tray Faucets

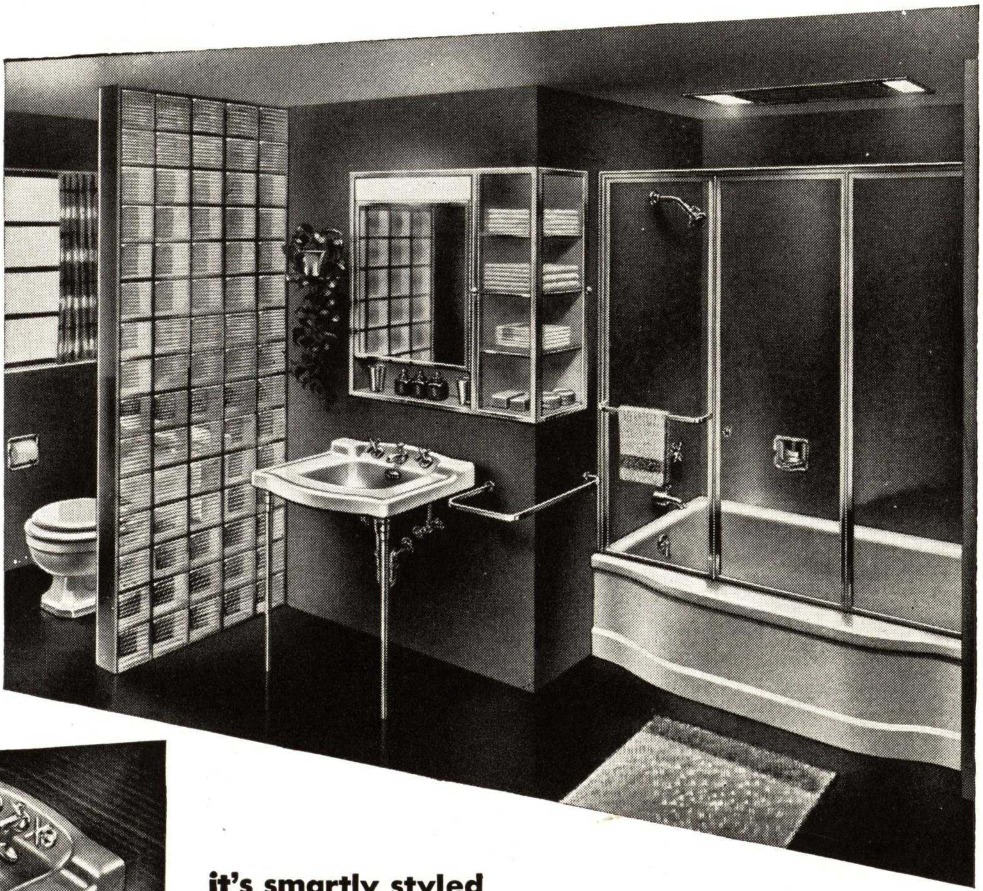
No. E-3508

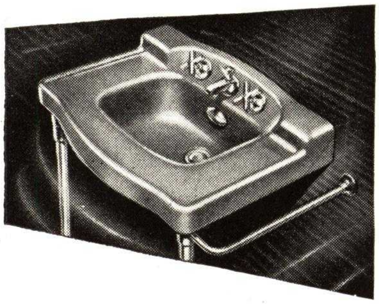
Rough nickel-plated laundry tray faucet with full waterway, removable tray, brackets, and swing spout.

Ground joint union tapped for ½-inch iron pipe.

Spout threaded for ¾-inch hose thread.

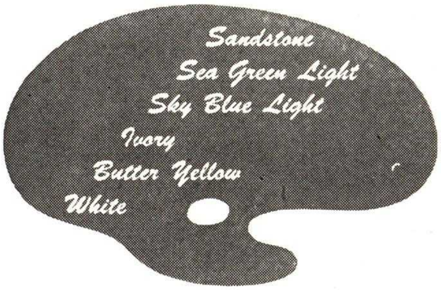
No. E-3508, with spout, 6¼ inches center to center.
No. E-3507, with spout, 15 inches center to center.





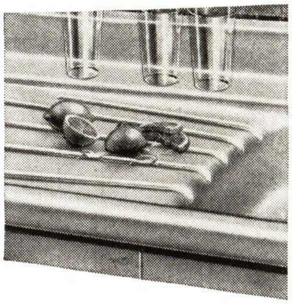
it's smartly styled

Modern and pleasing in appearance, each Briggs Beautyware fixture is designed to give the fullest utility and convenience. A Briggs bathroom is a room of beauty, an enhancement to the charm of the home.



it's colorful

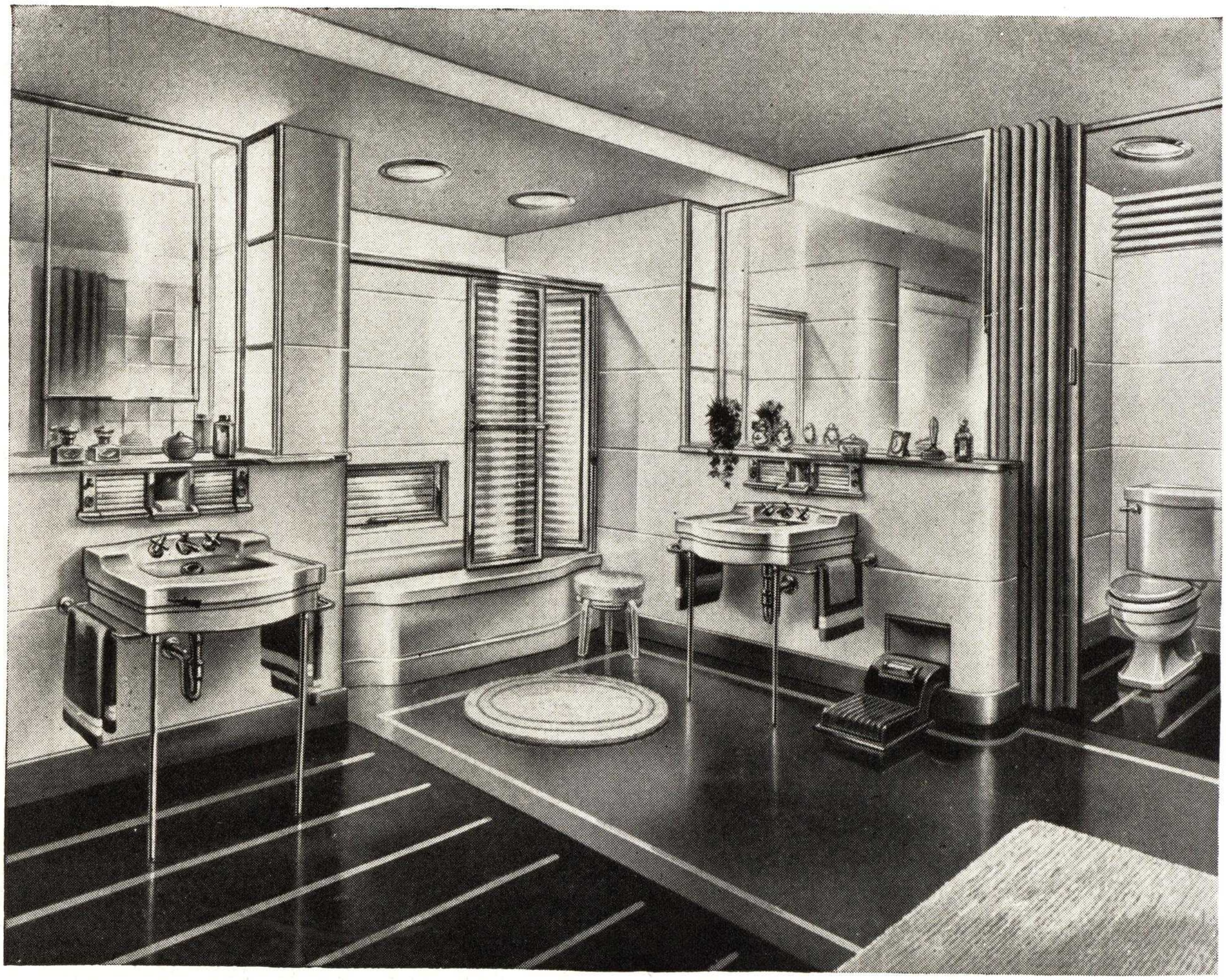
Briggs took the lead in popularizing the use of colored fixtures and has made it possible for home owners with even the most modest budgets to enjoy their advantages. Color in a variety of pleasing pastels blends tastefully with the most distinctive wall and floor treatments, and lends a homelike warmth to the room.



it's acid resisting

Briggs Beautyware Fixtures are of one quality—the highest—acid resisting porcelain enamel . . . easy to clean and easy to keep clean . . . and at no extra cost. Acid resisting enamel preserves original fixture beauty and protects it from the etching and surface staining common to regular enameled fixtures.

BRIGGS *Beautyware*



Fixtures Shown are the De Soto Safety Bottom Bathtub—Shelley Leg Lavatory and Zephyr Closet

Designed and Illustrated by Briggs Design Research Department

The Double Lavatory Bathroom

For years the average American family has been trying to get into the bathroom—all at the same time. The congestion and confusion caused by minimum size bathrooms has finally awakened a widespread demand for more space in this important room.

There are members of a group of home builders, and their name is legion, who will provide facilities in specifications written today to take care of an expanding family group in later years. This calls for an extra lavatory in the bathroom in some cases (as illustrated) or one in the bedroom in others. Innumerable surveys indicate that it will be more of a show place than ever.

A colorful and attractive booklet illustrating Briggs Beautyware kitchens and bathrooms will be sent on request.

BRIGGS *Beautyware*

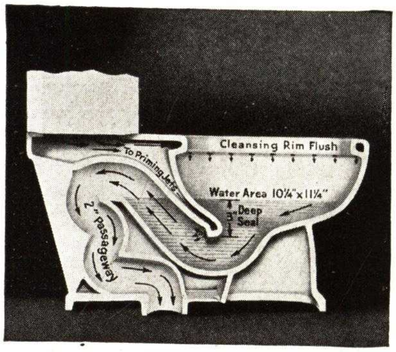
Kohler Closets

Made of non-absorbent vitreous china, twice-fired at high temperatures. The highly glazed surface is permanently sanitary since it will not check, craze, or discolor. Free from beads, and minus other ornamentation; easy to keep clean.

This line of closets is complete, offering a type best suited to the place, whether that be a home, institution, office, factory, or public building.

Carefully inspected; each bowl is tested under water pressure. Jets accelerate the action, producing strong, rapid, yet quiet cleansing flush. This closet meets, and in many instances exceeds, government specifications.

Vital to satisfactory operation of the closet is the mechanism in the tank. Kohler tank fittings are made of sturdy cast brass and copper tubing, to resist corrosion. Action is sure and quiet and dependable.


Cleansing Rim Flush
To Priming Jets
Water Area 10¼"x11¼"
3" Deep Seal
2" Passageway

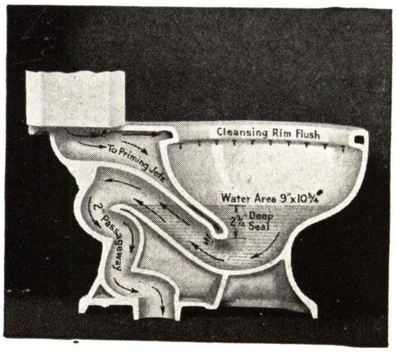
Integra

Reverse Trap

A quiet, one-piece, hygienic closet.

Has concealed twin jets. Positive in action, yet can scarcely be heard outside the bathroom door. Strong rim flush. Bowl will not back syphon.

Space saving; clean-cut and well proportioned.


Cleansing Rim Flush
To Priming Jets
Water Area 9"x10¾"
2¾" Deep Seal
2" Passageway

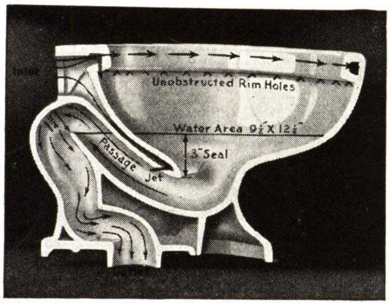
Bolton

Reverse Trap

A quiet, positive, syphonic action closet.

Tank is securely bolted to bowl to produce a low, compact combination.

Bowl will not back syphon.

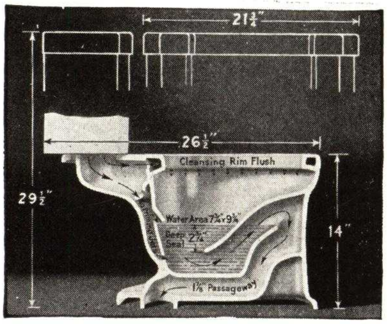

Inlet
Unobstructed Rim Holes
Water Area 9½"X12½"
3" Seal
Passage
Jet

Brooklands

Reverse Trap

Large water area and minimum soiling space characterize this bowl. Concealed jet promotes effective flushing.

Costs but little more than the wash-down type but is vastly superior. Separate tank and bowl.

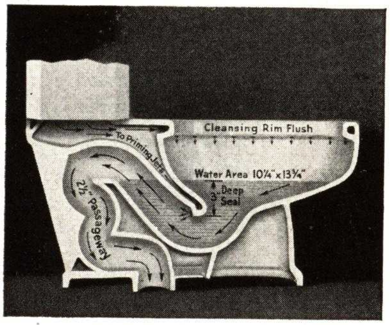

21½"
26½"
29½"
14"
Cleansing Rim Flush
Water Area 7¾"x9¾"
Deep 2¾" Seal
1⅞" Passageway

Trent

Wash-Down

Where strictest economy is necessary, the Trent is the logical choice.

The Trent does not depend upon the weight of water to cause the flush; action is facilitated by the jet.

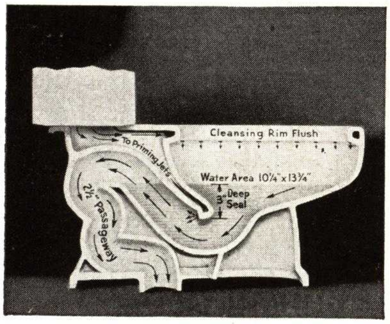

Cleansing Rim Flush
To Priming Jets
Water Area 10¼"x13¾"
3" Deep Seal
2½" Passageway

Placid

Syphon Jet

A quiet, one-piece, hygienic closet with elongated bowl.

Has concealed twin jets. Positive in action, yet can scarcely be heard outside the bathroom door. Strong rim flush. Bowl will not back syphon.


Cleansing Rim Flush
To Priming Jets
Water Area 10¼"x13¾"
3" Deep Seal
2½" Passageway

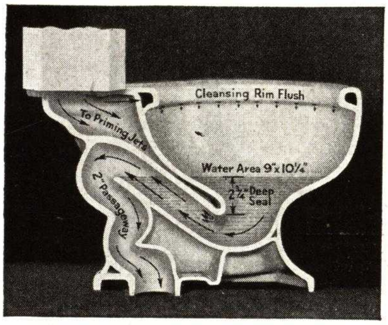
Channel

Syphon Jet

A quiet, positive, syphonic action close-coupled closet with elongated bowl and concealed twin jets.

Tank is securely bolted to bowl to produce a low, compact combination.

Bowl will not back syphon.

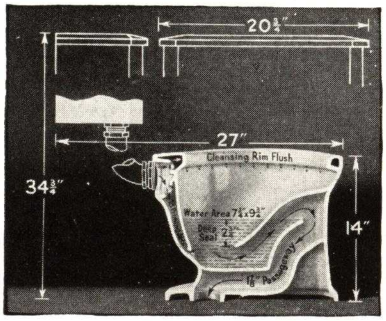

Cleansing Rim Flush
To Priming Jets
Water Area 9"x10¼"
2¾" Deep Seal
2" Passageway

Wellworth

Reverse Trap

Regular bowl with large water area and minimum soiling space. Concealed twin priming jets promote effective flushing.

Costs but little more than the wash-down type. Tank securely bolted to bowl.

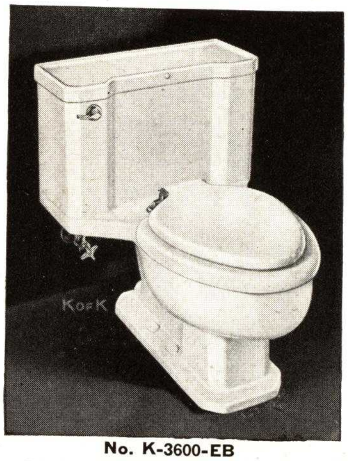

20¾"
27"
34¾"
14"
Cleansing Rim Flush
Water Area 7¾"x9¾"
Deep 2¾" Seal
1⅞" Passageway

Trylon

Wash-down

A modern close-coupled wash-down closet of excellent appearance. Suitable for low cost housing.

Bowl has round front. The cleansing rim flush and priming jet give dependable flushing action.



No. K-3600-EB

Placid One-Piece Syphon Jet Closet Combination

Bowl and tank in one piece. Bowl: Syphon jet type, elongated pattern with concealed twin priming jets and integral supply to flushing rim. Tank: Recessed panel front with shelf cover.

Fittings: Anti-syphon float valve; flush valve; single action flush lever with metal handle; two closet screws, two floor bolts, and four china bolt covers.

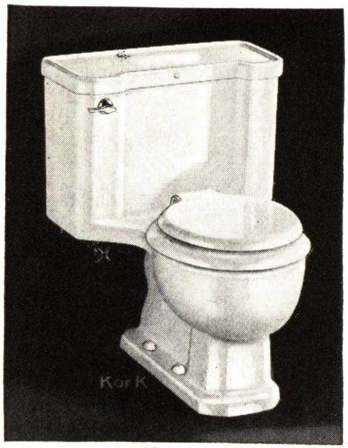
Supply Pipe: ⅜-inch I.P. size to wall with angle stop.

Seat: White sheet covered, with closed front, tail back, cover, and concealed bar hinge with metal hinge posts.

Exposed Metal: Chromium plated.

Back of Tank to Center of Outlet	inches	12½
Back of Tank to Front of Bowl	inches	29½
Height Overall	inches	29¼
Width Overall	inches	22
Height of Bowl	inches	14¾
Approximate Shipping Weight, with Seat	pounds	175

Furnished in white or colors.



No. K-3610-PB

Integral One-Piece Reverse Trap Closet Combination

Bowl and tank in one piece. Bowl: Reverse trap type, round front pattern with concealed twin priming jets and integral supply to flushing rim. Tank: Recessed panel front, 4 gallon, with shelf cover.

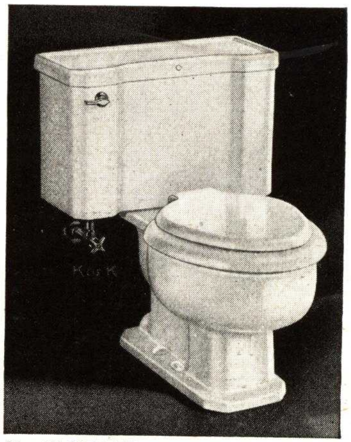
Fittings: Anti-syphon float valve; flush valve; single action flush lever with metal handle; two closet screws, two floor bolts, and four china bolt covers.

Supply Pipe: ⅜-inch I.P. size to wall with angle stop.

Seat: White sheet covered, with closed front, tail back, cover, and concealed bar hinge with metal hinge posts.

Back of Tank to Center of Outlet	inches	12½
Back of Tank to Front of Bowl	inches	27½
Height Overall	inches	29¼
Width Overall	inches	22
Height of Bowl	inches	14
Approximate Shipping Weight with Seat	pounds	165

Furnished in white or colors.



No. K-3655-EB, with Elongated Bowl
No. K-3655-PB, with Round Front Bowl

Channel Close-Coupled Syphon Jet Closet Combination

Bowl: Vitreous china, syphon jet type, with extended shelf.

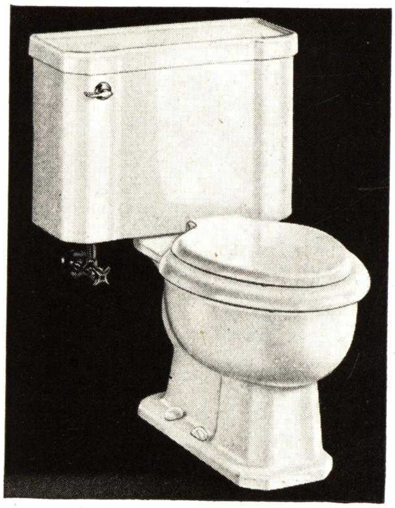
Tank: Vitreous china, recessed panel front with shelf cover. Supported on shelf of bowl.

Fittings: Elevated anti-syphon float valve; flush valve; single action flush lever with metal handle; two closet screws, two floor bolts, and four china bolt covers.

Supply Pipe: ⅜-inch I.P. size to wall with angle stop.

Seat: White sheet covered, with closed front, tail back, cover, and concealed bar hinge with metal hinge posts.

		Elongated	Round Front
Back of Tank to Center of Outlet	inches	12½	12½
Back of Tank to Front of Bowl	inches	29	27
Width Overall	inches	22	22
Height of Bowl	inches	14¾	14¾
Approximate Ship. Wt., with Seat	pounds	150	150



No. K-3665-EB, with Elongated Bowl
No. K-3665-PB, with Round Front Bowl

Bolton Close-Coupled Reverse Trap Closet Combination

Bowl: Vitreous china, reverse trap type.

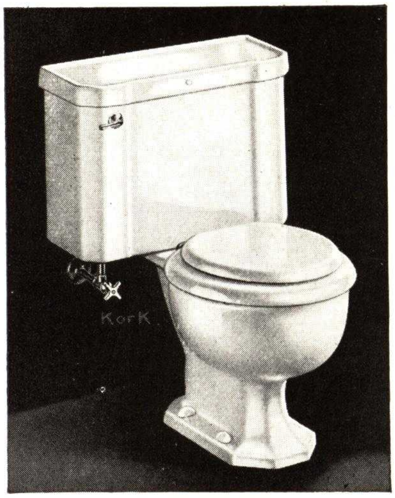
Tank: Vitreous china, recessed panel front, shelf cover.

Fittings: Anti-syphon float valve; flush valve; single action flush lever; closet screws, bolts, and bolt covers.

Supply Pipe: ⅜-inch I.P. size to wall with angle stop.

Seat: White sheet covered, with closed front, and cover.

		Elongated	Round Front
Back of Tank to Center of Outlet	inches	12½	12½
Back of Tank to Front of bowl	inches	30	28
Height of Bowl	inches	14½	14½
Height Overall	inches	30	30
Approx. Ship. Weight, with Seat	pounds	142	126



No. K-3705-PB

Wellworth Reverse Trap Close Coupled Closet Combination

Bowl: Vitreous china, reverse trap type, round front pattern, with self draining jet and extended rear shelf.

Tank: Vitreous china, 6-gallon capacity, with shelf top lid. Supported on shelf of bowl.

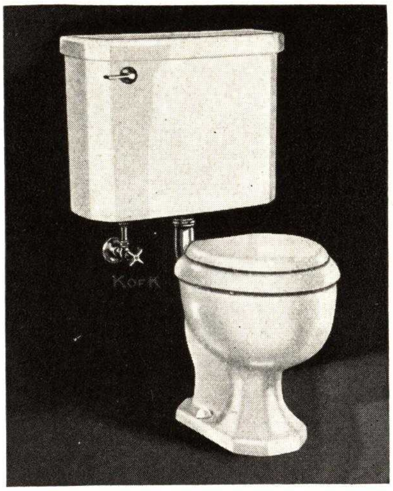
Fittings: Elevated float valve, flush valve, single action flush lever with metal handle, tank coupling, two closet screws, and four china bolt caps.

Supply Line: 3/8-inch I.P. size to wall with angle stop.

Seat: White coated, with closed front, cover, and bar hinge.

Back of Tank to Center of Outlet	inches	12½
Back of Tank to Front of Bowl	inches	26½
Height of Bowl	inches	14½
Approximate Shipping Weight, with Seat	pounds	120

Furnished in white or colors.



No. K-3721-EB, with Elongated Bowl
No. K-3721-PB, with Round Front Bowl

Brooklands Reverse Trap Closet Combination

Bowl: Vitreous china, syphon action type, with concealed jet, and back supply inlet. Two china bolt caps.

Tank: Vitreous china, with depressed lid. Supported on wall screws.

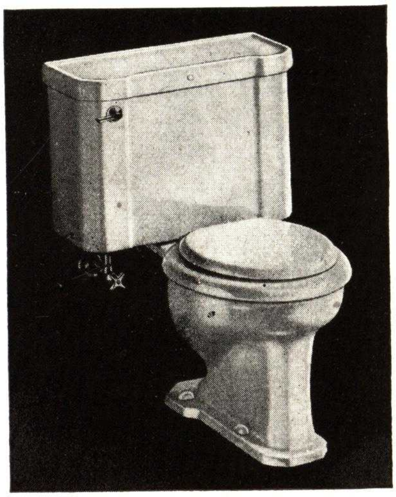
Fittings: Bottom supply float valve, metal handle trip lever, flush valve, and elbow flush connection.

Supply Pipe: 3/8-inch I.P. size to wall with angle stop.

Seat: White coated with closed front, cover, and concealed bar hinge.

		Elongated	Round Front
Back of Tank to Center of Outlet	inches	12	12
Back of Tank to Front of Bowl	inches	29	27
Height of Bowl	inches	14½	14½
Approximate Shipping Weight	pounds	120	115

Furnished in white or colors.



No. K-3745-PB

Trylon Wash-Down Close-Coupled Closet Combination

Bowl: Vitreous china, wash down type, round front pattern, with jet and extended rear shelf.

Tank: Vitreous china, with shelf top cover.

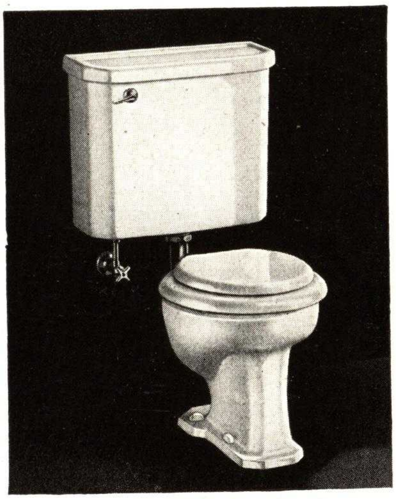
Fittings: Elevated float valve; flush valve; single action flush lever with metal handle; two closet screws, two floor bolts, and four china bolt caps.

Supply Pipe: 3/8-inch I.P. size to wall with angle stop.

Seat: White sheet covered, with closed front and cover.

Back of Tank to Center of Outlet	inches	12½
Back of Tank to Front of Bowl	inches	26½
Height Overall	inches	29½
Width Overall	inches	21¾
Height of Bowl	inches	14
Approximate Shipping Weight, with Seat	pounds	115

Furnished in white or colors.



No. K-3750-PB

Trent Wash-Down Closet Combination

Bowl, vitreous china, wash-down type, round front pattern, with jet, and rear supply inlet.

Tank, vitreous china, with depressed lid. Supported on wall screws.

Fittings, bottom supply float valve, flush valve, single action flush lever with metal handle, elbow flush connection and china bolt caps.

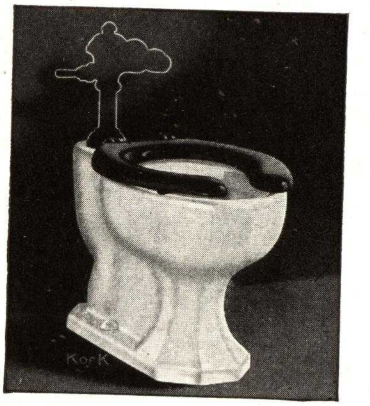
Supply pipe, 3/8-inch I.P. size to wall with angle stop.

Seat, white coated, with closed front, cover, and concealed bar hinge.

Exposed metal chromium plated.

Back of Tank to Center of Outlet	inches	14
Back of Tank to Front of Bowl	inches	27
Approximate Shipping Weight	pounds	109

Furnished in white or colors.



No. K-3800-ET, with Elongated Bowl
No. K-3800-PT, with Round Front Bowl

Rockwell Syphon Jet Closet Combination

Bowl: Vitreous china, syphon jet type, elongated pattern, with concealed jet and top supply inlet. Designed to pass 2⅞-inch ball.

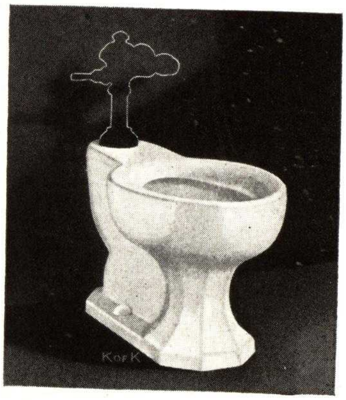
Fittings: Flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt covers.

Seat: Black plastic, with extended open front, less cover.

Exposed Metal: Chromium plated.

		Elongated	Round Front
Roughing-In	inches	12	12
Wall to Front of Bowl	inches	29	27
Height of Bowl	inches	14½	14½
Width Overall	inches	14	14
Approx. Ship. Wt., Bowl Only	pounds	60	60

Furnished in white or colors.



No. K-3805-ET, Elongated Bowl
No. K-3805-PT, Round Front Bowl

Rothwell Syphon Jet Closet Combination

Bowl: Vitreous China, syphon jet type, elongated pattern, with integral seat, concealed jet, and top supply inlet.

Fittings: Flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt caps.

Exposed Metal: Chromium plated.

		Elongated	Round Front
Roughing-In	inches	12	12
Wall to Front of Bowl	inches	29	27
Width Overall	inches	14	14
Passageway	inches	2⅞	2⅞
Approx. Ship. Weight, Bowl Only	lb.	80	76

Furnished in white only.

No. K-3810-ET, Elongated Bowl
No. K-3810-PT, Round Front Bowl

Welland Syphon Jet Closet Combination

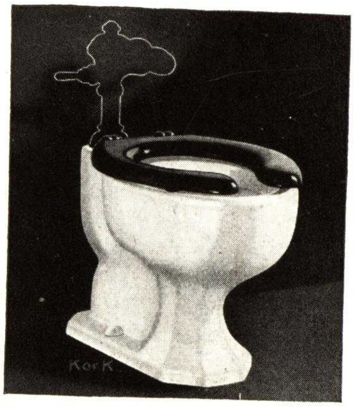
Bowl: Vitreous china, syphon jet type with concealed twin priming jets, and 1½-inch top supply inlet. Designed to pass 2½-inch ball.

Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, two floor bolts, and two china bolt caps.

Seat: Black plastic, with extended open front, less cover.

		Elongated	Round Front
Roughing-In	inches	10	10
Wall to Front of Bowl	inches	28¼	26¼
Height of Bowl	inches	14	14
Width Overall	inches	14	14
Approx. Ship. Wt., Bowl Only	pounds	58	56

Furnished in white or colors.
Especially designed for use with quiet-acting flush valves.



No. K-3820-ET, with Elongated Bowl
No. K-3820-PT, with Round Front Bowl

Penryn Syphon Jet Closet Combination

Bowl: Vitreous china, syphon jet type, elongated pattern, with concealed jet and top supply inlet. Designed to pass 2½-inch ball.

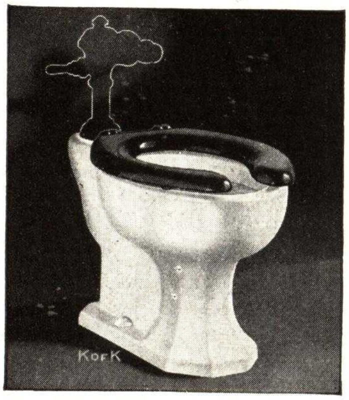
Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt covers.

Seat: Black plastic, with extended open front, less cover.

Exposed Metal: Chromium plated.

		Elongated	Round Front
Roughing-In	inches	12	12
Wall to Front of Bowl	inches	27	25
Height of Bowl	inches	15	15
Width Overall	inches	14	14
Approx. Ship. Wt., Bowl Only	pounds	61	56

Furnished in white or colors.



No. K-3841-ET, with Elongated Bowl
No. K-3841-PT, with Round Front Bowl

Downning Syphon Jet Closet Combination

Bowl: Vitreous china, syphon jet type, with concealed jet and top supply inlet. Designed to pass 2½-inch ball.

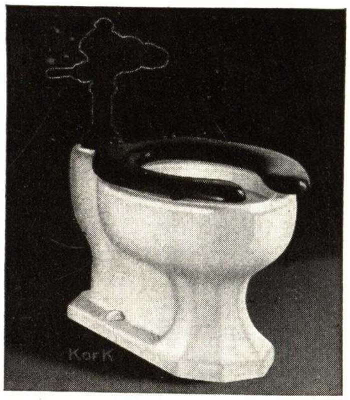
Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt covers.

Seat: Black plastic, with open front, less cover.

Exposed Metal: Chromium plated.

		Elongated	Round Front
Roughing-In	inches	12	12
Wall to Front of Bowl	inches	28½	26½
Height of Bowl	inches	15	15
Width Overall	inches	14	14
Approx. Shipping Weight, Bowl Only	pounds	64	57

Furnished in white or colors.



No. K-3860-ET, with Elongated Bowl
No. K-3860-PT, with Round Front Bowl

Juvenile Syphon Jet Closet Combination

Bowl: Vitreous china, syphon jet type, elongated pattern with concealed jet and top supply inlet.

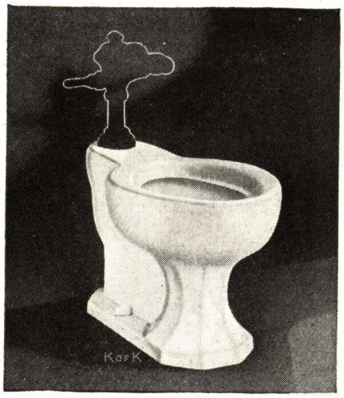
Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt caps.

Seat: Black plastic, with extended open front, less cover.

Exposed Metal: Chromium plated.

		Elongated	Round Front
Roughing-In	inches	11	11
Wall to Front of Bowl	inches	28	26
Height of Bowl	inches	13	13
Width Overall	inches	14	14
Approx. Shipping Weight, Bowl Only	pounds	73	70

Furnished in white or colors.



No. K-3846-PT, with Round Front Bowl
No. K-3846-ET, with Elongated Bowl

Darvel Syphon Jet Closet Combination

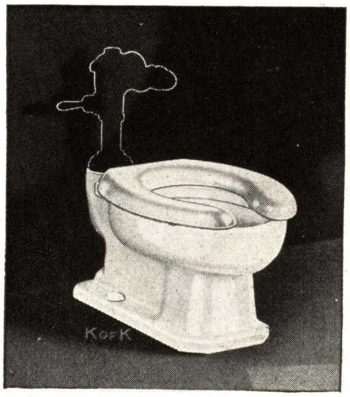
Bowl: Vitreous china, syphon jet type, with integral seat, concealed jet, and top supply inlet.

Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt caps.

Exposed Metal: Chromium plated.

		Elongated	Round Front
Roughing-In	inches	12	12
Wall to Front of Bowl	inches	28½	26½
Width Overall	inches	14	14
Passageway	inches	2½	2½
Approx. Ship. Weight, Bowl Only	pounds	66	58

Furnished in white only.



No. K-3865-ET

Primary Syphon Jet Closet Combination

Bowl: Vitreous china, syphon jet type, elongated pattern, with concealed twin priming jets and 1½ inch top supply inlet. Designed to pass 1¾-inch ball.

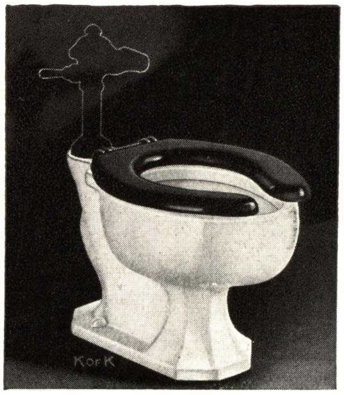
Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges; two floor bolts, and two china bolt caps.

Seat: White plastic, with extended open front, less cover.

Exposed Metal: Chromium plated.

Roughing-In	inches	10
Wall to Front of Bowl	inches	25½
Height of Bowl	inches	10
Width Overall	inches	12½
Approximate Shipping Weight, Bowl Only	pounds	42

Furnished in white or colors.



No. K-3890-ET

Swift Blow-Out Closet Combination

Bowl: Vitreous china, blow-out type, elongated pattern with concealed twin priming jets, and 1½-inch top supply inlet.

Fittings: Flush valve with side inlet, 1-inch ground joint union, angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges; two floor bolts, and two china bolt caps.

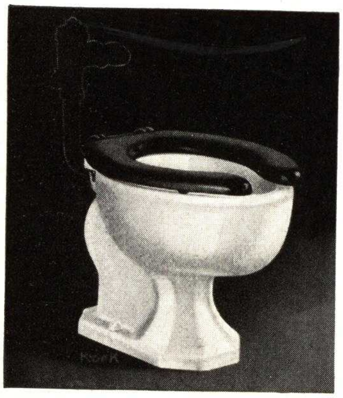
Seat: Black plastic, with open front, less cover.

Exposed Metal: Chromium plated.

Roughing-In	inches	9
Wall to Front of Bowl	inches	28
Height of Bowl	inches	14½
Width Overall	inches	14
Approximate Shipping Weight, Bowl Only	pounds	53

Designed for use with direct pressure flush valve only. Working pressure for successful operation should be not less than 25 pounds at the bowl.

Furnished in white or colors.



No. K-3941-ER, with Elongated Bowl
No. K-3941-PR, with Round Front Bowl

Brooklands Reverse Trap Closet Combination

Bowl: Vitreous china, reverse trap type, with concealed twin priming jets, and 1½-inch back supply inlet.

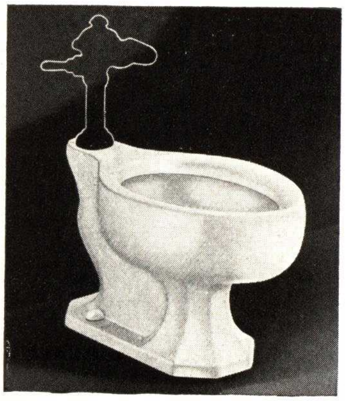
Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1¼-inch elbow flush connection wall and spud flanges, two floor bolts, and two china bolt caps.

Seat: Black plastic, with extended open front, less cover.

Exposed Metal: Chromium plated.

		Elongated	Round Front
Roughing-In	inches	9¾	9¾
Wall to Front of Bowl	inches	26¾	24¾
Height of Bowl	inches	14½	14½
Width Overall	inches	14	14
Approx. Ship. Wt., Bowl Only	pounds	50	44

Furnished in white or colors.



No. K-3895-ET

Swift Blow-Out Closet Combination

Bowl: Vitreous china, blow-out type, elongated pattern with integral seat, jet, and top supply inlet.

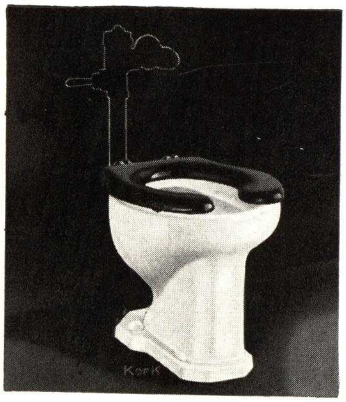
Fittings: Flush valve with side inlet, 1-inch ground joint union, angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges; two floor bolts, and two china bolt caps.

Exposed Metal: Chromium plated.

Roughing-In	inches	9
Wall to Front of Bowl	inches	28
Height of Bowl	inches	14½
Width Overall	inches	14
Approximate Shipping Weight, Bowl Only	pounds	50

Designed for use with direct pressure flush valve only. The working pressure for successful operation should be not less than 25 pounds at the bowl.

Furnished in white only.



No. K-3960-PR

Trent Wash-Down Closet Combination

Bowl, vitreous china, wash-down type, round front pattern with jet and 1½-inch back supply inlet.

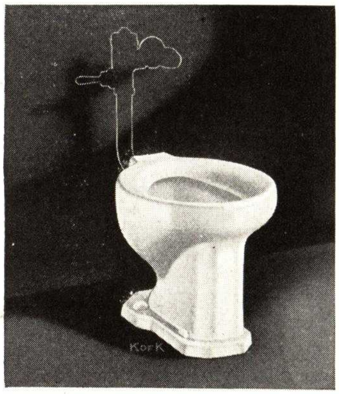
Fittings, flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch elbow flush connection, wall and spud flanges; two floor bolts, two floor screws, and four china bolt caps.

Seat, black plastic, with open front, less cover.

Exposed metal chromium plated.

Roughing-In	inches	11
Wall to Front of Bowl	inches	24
Height of Bowl	inches	14
Width Overall	inches	14
Approximate Shipping Weight, Bowl Only	pounds	35

Furnished in white or colors.



No. K-3965-PR

Thurlow Wash-Down Closet Combination

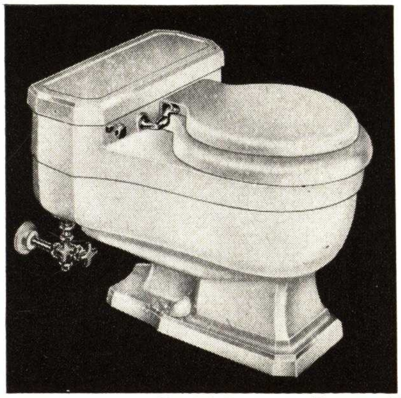
Bowl: Vitreous china, wash-down type, round front pattern with integral seat, concealed jet, and 1½-inch back supply inlet.

Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch elbow flush connection, wall and spud flanges; two floor bolts, two floor screws, and four china bolt caps.

Exposed Metal: Chromium plated.

Roughing-In	inches	11
Wall to Front of Bowl	inches	24
Width Overall	inches	14
Passageway	inches	1⅞
Approximate Shipping Weight, Bowl Only	pounds	38

Furnished in white only.



Patented **No. 55-A** Patents Pending

T/N One-Piece Closet Combination

Bowl and tank integral. Bowl, centrifugal flushing action type, regular pattern. Concealed supply to flushing rim. Tank with shelf type lid locked on.

Fittings: Float valve, metal handle trip lever, flush valve, and china bolt covers. Supply pipe, ⅜-inch I.P. size to wall with stop, metal handle, and escutcheon.

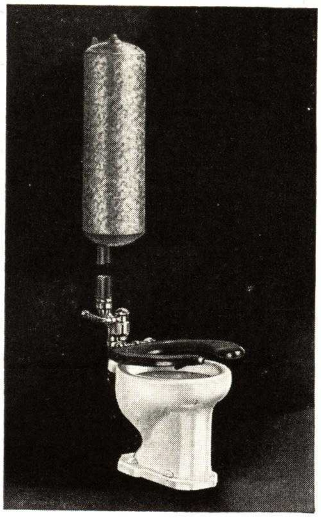
Seat: White sheet covered with closed front, cover, and concealed bar hinge with exposed hinge posts.

Approximate Shipping Weight	pounds	127

Furnished in white or colors.

T/N Seat Styles

No. **55**-A, with white sheet covered closed front seat with cover.
No. **60**-A, with white sheet covered open front seat with cover.
No. **65**-A, with white sheet covered open front seat less cover.
No. **70**-A, with white sheet covered closed front seat less cover.
No. **80**-A, with black hard rubber open front seat less cover.
No. **85**-A, with black hard rubber open front seat with cover.
No. **90**-A, with black hard rubber closed front seat with cover.



No. K-3987-PH

Trent Wash-Down Closet Combination

Bowl: Vitreous china, wash-down type, round front pattern with jet and back supply inlet.

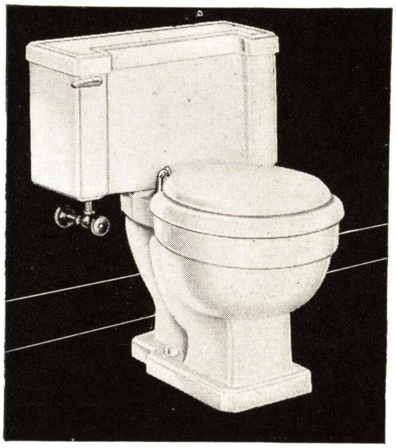
Fittings: 8x24-inch galvanized pressure tank and flush pipe, chromium-plated seat-action valve with ell; bolts, washers, and china bolt caps.

Seat: Plain oak, with open front, less cover.

Roughing-In	inches	14
Wall to Front of Bowl	inches	29¾
Width Overall	inches	14
Approximate Shipping Weight, Bowl Only	pounds	35

Furnished in white or colors.

Hydromatic pressure tank closet combinations for factory, school and public use. Flush automatically when used.



No. 1200

DeLuxe Water Saver Syphon Action Closet Combination

Bowl, vitreous china, regular pattern, with concealed jet and top supply inlet.

Tank, vitreous china, with recessed panel front. Supported on shelf of bowl.

Fittings, bottom supply float valve, metal handle trip lever, flush valve, and china bolt caps.

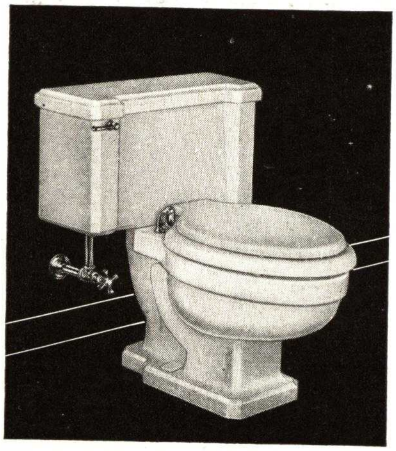
Supply pipe, ⅜-inch I.P. size to wall with angle stop, metal handle and escutcheon.

Seat, white sheet covered with closed front, cover, and concealed bar hinge with exposed hinge posts.

Exposed metal chromium-plated.

Approximate Shipping Weight	pounds	132

Furnished white or colored.



No. 1210

DeLuxe Water Saver Syphon Action Closet Combination

Bowl, vitreous china, syphon jet type elongated pattern with concealed jet and extended rear shelf.

Tank, vitreous china, recessed panel front, with shelf top lid. Supported on shelf of bowl.

Fittings, elevated float valve, flush valve, single action flush lever with metal handle, closet screws, and china bolt covers.

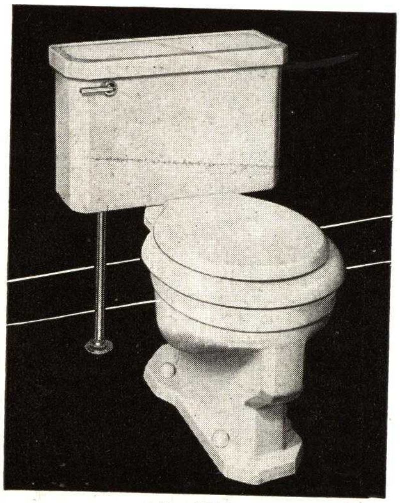
Supply pipe, ⅜-inch I.P. size to wall with angle stop, metal cross handle, and escutcheon.

Seat, white sheet covered, with extended closed front, cover, and metal hinge.

Exposed metal chromium plated.

Wall to Center of Outlet	inches	12
Wall to Front of Bowl	inches	29⅝
Approximate Shipping Weight	pounds	135

Furnished in white or colors.



No. 1380

Benning Syphon Action Wash-Down Close Coupled Closet Combination

Bowl: Vitreous china, syphon action wash down type, regular pattern, with jet and extended rear shelf.

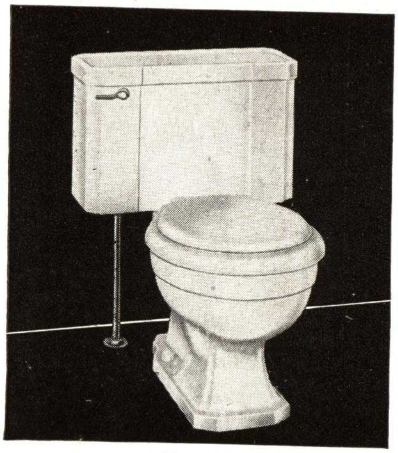
Tank: Vitreous china with shelf top lid. Supported on shelf of bowl.

Fittings: Elevated float valve, flush valve, single action flush lever with metal handle, two closet screws, and four china bolt caps.

Supply Pipe: ⅜-inch I.P. size to floor with escutcheon.

Seat: White sheet covered, with closed front, cover, and concealed bar hinge with metal hinge posts.

Back of Tank to Center of Outlet	inches	10½
Back of Tank to Front of Bowl	inches	26½
Width Overall	inches	20¾
Approximate Shipping Weight	pounds	108



No. 1325

Camel Water Saver Reverse Trap Closet Combination

Bowl, vitreous china, regular pattern, with jet and top supply inlet.

Tank, vitreous china, with recessed panel front. Supported on shelf of bowl.

Fittings, bottom supply float valve, metal handle trip lever, flush valve, and china bolt caps.

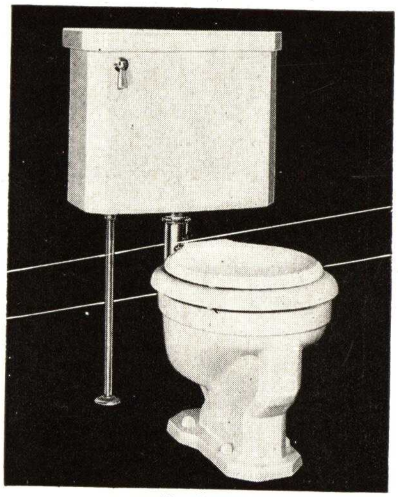
Supply pipe, ⅜-inch I.P. size to floor with metal escutcheon.

Seat, white sheet covered with closed front, cover, and concealed bar hinge with exposed hinge posts.

Exposed metal chromium plated.

Approximate Shipping Weight	pounds	116

Furnished white or colored.



No. 1400

Zeco Syphon Action Wash-Down Closet Combination

Bowl: Vitreous china, regular pattern, with jet and rear supply inlet.

Tank: Vitreous china, 6-gallon capacity, with depressed lid. Supported on wall screws.

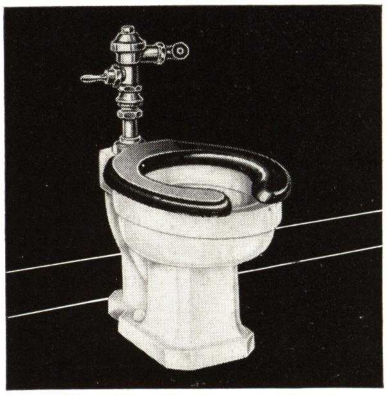
Fittings: Elevated float valve, flush valve, single action flush lever with metal handle, elbow flush connection and china bolt caps.

Supply Pipe: ⅜-inch I.P. size to floor with escutcheon.

Seat: White sheet covered with closed front, cover, and cast brass bar hinge.

Back of Tank to Center of Outlet	inches	14
Back of Tank to Front of Bowl	inches	27¼
Width Overall	inches	20¼
Approximate Shipping Weight	pounds	108

Furnished in white only.



No. 1600, with Elongated Bowl
No. 1625, with Round Front Bowl

Syphon Jet Closet Combination

Bowl: Vitreous china, syphon jet type, elongated pattern, with concealed jet and top supply inlet.

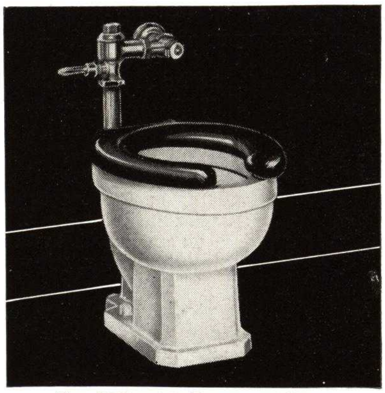
Fittings: Flush valve with vacuum breaker, side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch straight flush connection, wall and spud flanges, and two china bolt covers.

Seat: Black hard rubber, with extended open front, less cover, and with black check hinge.

Exposed Metal: Chromium plated

		Elongated	Round Front
Center of Spud to Center of Outlet	in.	7½	7½
Wall to Front of Bowl	in.	25¾	23¾
Width Overall	in.	14	14
Approximate Shipping Weight, Bowl Only	lb.	69	69

Furnished in white or colors.



No. 1650, with Elongated Bowl
No. 1660, with Round Front Bowl

Reverse Trap Closet Combination

Bowl: Vitreous china, reverse trap type, with concealed jet, and back supply inlet.

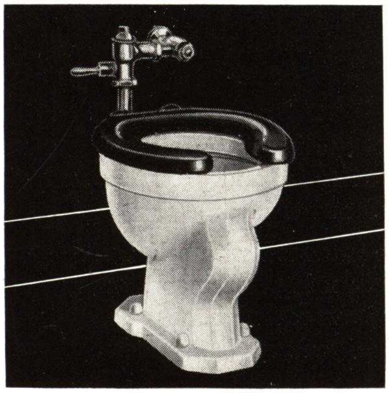
Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1¼-inch elbow flush connection wall and spud flanges, two floor bolts, and two china bolt caps.

Seats: Black hard rubber, with extended open front, less cover.

Exposed Metal: Chromium plated.

		Elongated	Round Front
Face of Spud to Center of Outlet	inches	6	6
Wall to Front of Bowl	inches	....	....
Width Overall	inches	14	14
Approx. Ship. Wt. Bowl Only	pounds	55	51

Furnished in white or colors.



No. 1675

Wash-Down Closet Combination

Bowl: Vitreous china, wash-down type, round front pattern with jet and 1½-inch back supply inlet.

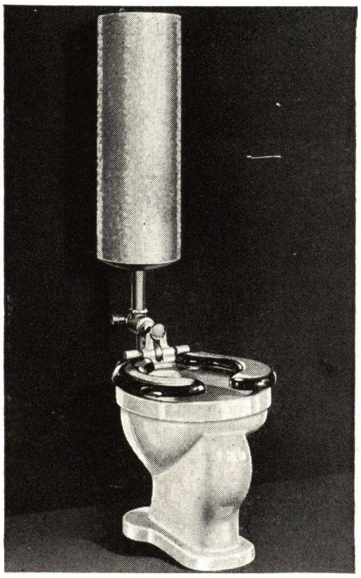
Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1½-inch elbow flush connection, wall and spud flanges; two floor bolts, two floor screws and four china bolt caps.

Seat: Black hard rubber, with open front, less cover.

Exposed Metal: Chromium plated.

Wall to Front of Bowl	inches	24¼
Height of Bowl	inches	14
Width Overall	inches	14
Approximate Shipping Weight, Bowl Only	pounds	45

Furnished in white or colors.



No. 700

Haas Automatic Syphon Action Wash Down Closet Combination

Bowl, vitreous china, syphon action wash down type, regular pattern with back supply inlet.

Tank, galvanized iron pressure tank.

Fittings, seat action flush valve with back inlet, and straight flush connection.

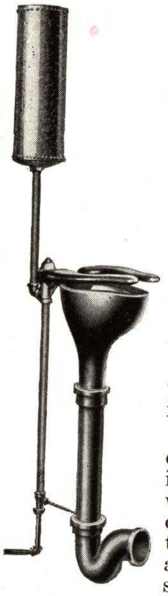
Supply pipe, ⅜-inch I.P. size.

Seat, oak, open front and back, without cover, with reinforced hinge.

Exposed brass white nickel finish.

Approximate Shipping Weight................pounds 85

No. H-1 Haas Automatic Frostproof Water Closets



This water closet has a red brass valve body, high-grade brass interior working parts, and phosphor bronze spring.

Washers are made of the best leather, no rubber.

The plunger operates into the inlet valve (below ground) with a loose and easy fit, thereby avoiding any danger of the plunger sticking fast on account of the accumulation around it, of lime or other mineral deposit in the water.

The patented construction of the inlet valve prevents all sewage contamination in adjacent fixtures.

The unobstructed drain tube insures rapid drain of valve stem—made of seamless, annealed copper and will not break off if earth in the trench settles.

The hopper has an extended front for sanitary protection. Cast in one piece.

A baffle shield deflects and distributes the water so that a scouring cleansing flush is insured.

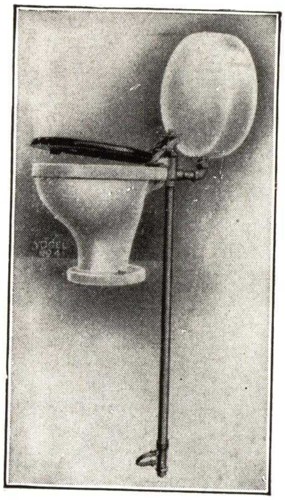
This combination includes cast iron hopper enameled inside only with spud end for calking into soil pipe, open back and front seat with reinforced hinge; complete hydrant with drain pipe and 8x24-inch galvanized pressure tank with necessary galvanized flush pipe and fittings. Hopper can be supplied with solid flange when so ordered; enameled all over at slight extra charge.

Soil pipe and trap not furnished.

Stems made any length up to 5 feet, without extra charge.

All parts interchangeable and renewable.

Approximate shipping weight, 80 pounds.



No. 4

Vogel Frost-Proof Closet Combination

Bowl: Vitreous china, round front pattern, hopper type, with flushing rim and top supply inlet.

Tank: Pressure, drum type, 4-gallon capacity, with painted white enamel finish.

Fittings: Supply and flush valve assembled with 3-foot 2-inch galvanized steel valve rod and casing, union ell flush connection, and lead waste connection.

Seat: Valve operating, reinforced hardwood, with varnish finish.

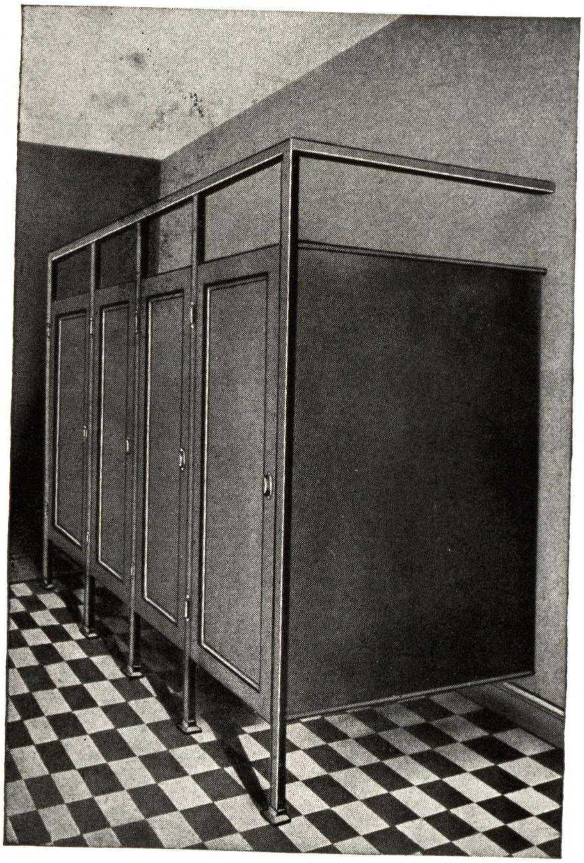
On frost-proof closets, depressing the seat raises the rod, allowing the tank to fill. Releasing the seat allows a strong flush direct from tank to hopper. The water in valve casing then passes down through waste valve (below frost line) into sewer, leaving entire fixture empty.

Approximate shipping weight, 100 pounds.

Valve assembly furnished any length up to 5 feet at no additional cost.

Can be furnished with galvanized drum tank or 8x24-inch galvanized cylindrical tank when specified.

Also available with vacuum breaker and ball check waste at added cost.



Steel Toilet Partitions with doors and all parts formed out of a special gauge steel of prepared metal furniture stock, annealed and patent leveled. Corners of doors are mitered and welded.

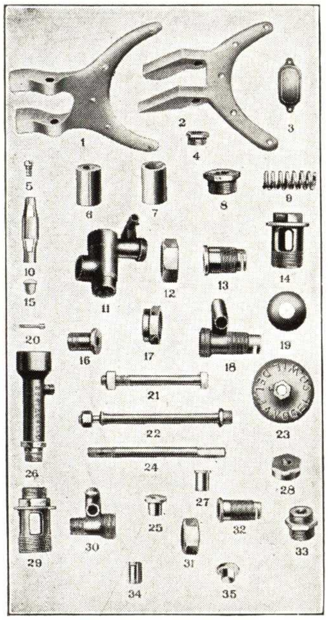
The doors are provided with self-closing spring hinges and bumpers with rubber cushions. They are also provided with double wardrobe hooks and substantial bolts on the inside. All hardware is finished in black.

The foot pieces are properly located and secured to the floor with expansion shields or bolts. The partitions are secured to the rear wall in the same manner as the starting standard, which is formed so as to make an angle to permit anchoring to the wall.

These closet compartment partitions are finished in baked japan in dark olive color. They may also be finished in light olive, black or maroon.

This steel work is sanitary, durable and economical and is easily erected. It is particularly commendable for use in school toilet rooms, and in factory toilet rooms.

Parts for Nos. 1, 2, 3, 4, 5 and 14 Vogel Closets



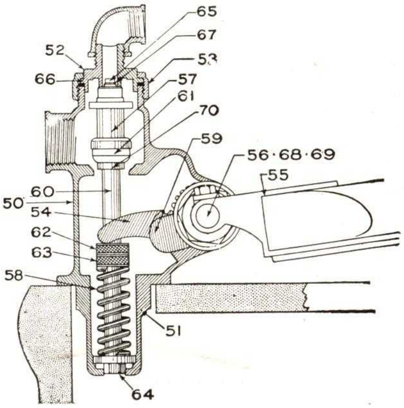
No.	Description	Each
C1	Seat Casting for Nos. 1, 3 and 5 and New Style for No. 2	$1.25
B2	Seat Casting for Old Style No. 2	1.25
3	Seat Buffer	.12
4	Small Packing Nut for Nos. 1 and 2 Old Style	.32
5	Brass Screw, Top of Plunger, Nos. 1, 2 and 4	.10
6	Brass Socket, Tapped One End, Nos. 1, 2 and 4	.32
7	Brass Socket, Tapped Both Ends, for No. 2	.32
8	Large Packing Nut for Nos. 1 and 2 Old Style	.44

No.	Description	Each
9	Spring for Nos. 1, 2, 3, 4, 5 and 14	$.50
10	Small Plunger for Nos. 1, 2 and 4	.79
11–1	Upper Flush Valve Body for No. 1	3.75
11–2	Upper Valve Body for No. 2	3.15
11–4	Upper Valve Body for No. 4	3.75
11–5	Large Flush Valve Body for Nos. 3 and 5	3.75
11–14	Large Flush Valve Body for No. 14	3.75
12	Large Coupling Nut, Nos. 1, 3 and 5	.53
13	1-Inch Fan Wash Swivel for Nos. 1, 3 and 5	.53
14	Flush Valve Plug for No. 1 Old Style	1.75
15	½-Inch Special Fuller Ball for Nos. 1, 2, 3, 4, 5 and 14	.07
16	½-Inch Brass Swivel, No. 2 Old Style	.38
17	Coupling Nut for No. 16	.38
18	Fan Wash, Hinge Fitting for No. 2 Old Style	1.05
19	Flush Valve Packing for Nos. 1, 3, 4, 5 and 14	.07
20	Brass Screw for Fuller Ball for Nos. 1, 2, 3, 4, 5 and 14	.10
21	½-Inch Brass Seat Bolt for Nos. 1, 2, 3, 4, 5 and 14	.38
22	Lead Waste Connection for Nos. 1, 2 and 4	.75
23	Lifting Plate for Nos. 1, 2, 3, 4, 5 and 14	.50
24	½-Inch Brass Lifting Rod for Nos. 1, 2, 3, 4, 5 and 14	.50
25	Flanged Socket for Nos. 1 and 4	.38
26	Supply Valve Body Nos. 1, 2 and 4	1.88
27	Spacer Sleeve for Nos. 1 and 4	.32
28	Packing Cap, New Style, Nos. 1, 2, 3, 4, 5 and 14	.38
29	Flush Valve Plug, New Style, Nos. 1, 3, 4, 5 and 14	1.75
30	Hinge Fitting, No. 2 New Style	1.05
31	Coupling Nut for No. 2 New Style	.38
32	¾-Inch Fan Wash Swivel, No. 2 New Style	.63
33	Large Packing Nut, No. 2, New Style	.75
34	Guide Sleeve for Nos. 3, 5 and 14	.63
35	Flanged Socket for Nos. 3, 5 and 14	.63
36	Lock Nut for Lifting Plate for Nos. 1, 2, 3, 4, 5 and 14	.10
37	Ring Nut for Flush Packing for Nos. 1 and 4	.10
38	Galvanized Iron Valve Rod, Regular Length, for Nos. 1, 2 and 4	.40
39	Galvanized Iron Casing, Regular Length, for Nos. 1, 2 and 4	1.00

Parts for Nos. 1, 2, 3, 4, 5, and 14 Vogel Closets

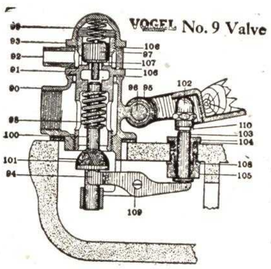
Tall Oval Vitreous China Hopper for Nos. 4 and 14	$13.00
Galvanized Cylindrical Pressure Tank, 8x24-Inch	7.50
Galvanized Drum Shaped Tank, 7x18-Inch	7.50
Seat, Complete, for Nos. 1, 3 and 5, or 4 and 14, or 2	3.75
Valve and Casing, Complete for No. 1	13.12
Valve and Casing, Complete, for No. 2	9.50
Valve and Casing Complete for No. 4	13.12
Valve Complete, for Nos. 3 and 5	11.38
Valve Complete for No. 14	11.38
Golden Oak Finish Seat, Nos. 1, 3, 4, 5 and 14, or 2	2.25
Golden Oak Varnish Finish Open Front Seat, Wood Only, for Nos. 1, 3, 4, 5 and 14	3.00
Seat Casting for Nos. 4 and 14	1.25

Repair Parts for No. 10 Vogel Closets



Description	Each
Valve Complete for No. 10	$17.50
Special Syphon Action Vitreous Bowl for No. 10	18.00
Galvanized Tank	7.50
Golden Oak Varnish Finish Seat, Wood Only	3.12
Golden Oak Varnish Finish Seat, Complete	5.75
No. 10 Syphon Action Bowl with Valve Assembled, Golden Oak Seat, Galvanized Pressure Tank and Flush Pipe	45.00
For Hard Rubber Seat add	6.00

No.	Description	Each
50	Valve Body for No. 10	$6.00
51	Bottom Valve Cage and Stem Guide	2.00
52	Supply Valve Swivel	1.25
53	Large Top Supply Coupling Nut	1.00
54	Valve Operating Lever	1.75
55	Seat Hinge and Brace	2.25
56	Valve Operating Pinion Shaft, Attached to Seat Brace	1.25
57	Upper Section of Valve Stem	.45
58	Valve Spring for No. 10	.50
59	Shaft Through Valve Operating Lever	.40
60	Lower Section of Valve Stem	.60
61	Flush Valve Packing for No. 10	.09
62	Adjusting Nut on Valve Stem	.20
63	Lock Nut on Valve Stem	.20
64	Guide Nut on Bottom of Valve Stem	.30
65	Supply Valve Packing Screw	.10
66	Fibre Coupling Ring Packing	.06
67	Supply Valve Packing	.06
68	Large Packing Nut on Pinion Shaft	.90
69	Small Packing Nut on Pinion Shaft	.40
70	Ring Nut for Holding Flush Valve Packing	.10



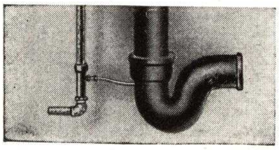
No. 9 Vogel Flush Valves and Parts

(Old Style)

Part No.	Description	Each
90	Valve Body for No. 9	$5.00
91	Flush Plug for No. 9 Valve	2.75
92	Brass Ring Supply Inlet	1.25
93	Valve Cap	1.25
94	" Operating Lever	.50
95	Seat Hinge Lever and Bracket	2.00
96	" " Bolt	.62
97	Supply Valve Piston	.32
98	Flush Valve Spring for No. 9	.38
99	Supply " "	.32
100	Flush Valve Stem	.94
101	Rubber Flush Valve Packing for No. 9	.06
102	Valve Operating Adjustable Nut	.32
103	" " " Rod	.32
104	Bushing Guide for Operating Rod	.25
105	Cap Guide for Operating Rod	.25
106	Fibre Coupling Packings	.06
107	Supply Valve Packing	.06
108	Fibre Coupling Packing	.06
109	Valve Operating Lever Screw	.12
110	Lock Nut for Adjustable Rod	.12
9	Galvanized Tank	7.50
9	Golden Oak Varnish Finish Seat, Wood Only	3.12
9	Golden Oak Varnish Finish Seat, Complete	5.75
9	Golden Oak Open Front Seat, Wood Only	3.12

No. 9 Valve, Complete........................each **$17.50**

No. 1-V Cast Iron P Traps

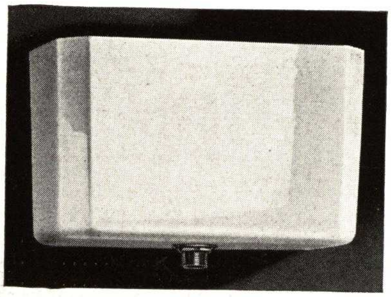


4-Inch

Tapped in heel for drain pipe from frost proof closet.

Size	inches	4
Standard	each	$1.75
Extra Heavy	each	2.10

Plaistow Enameled Cast Iron High Tanks



[No. K-4586-A

For Urinals

No. K-4586-A—6-gallon enameled iron high tank with top supply automatic fittings, 1¼-inch outlet connection.

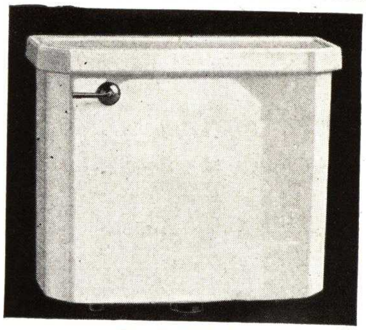
No. K-4583-A—3-gallon enameled iron high tank with top supply automatic fittings, ¾-inch outlet connection.

No.		K-4583-A	K-4586-A
Width Overall	inches	15¼	18¾
Height	inches	11¼	11¼
Front to Back	inches	7¼	9¼
Approximate Shipping Weight	pounds	....	....

NOTE: The No. K-4583-A tank is available with 1¼-inch outlet connection. The No. K-4586-A tank is available with 1½-inch outlet connection.

Furnished in regular white enamel only.

Winslow Vitreous China Low Tanks



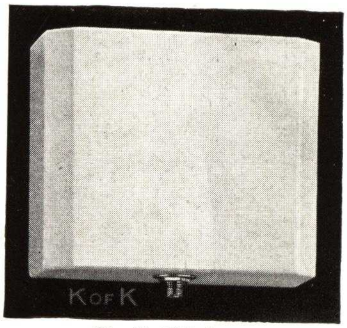
No. K-4500-A

Fittings, float valve, flush valve, single action flush lever with metal handle, 2-inch flush connection, wall screws, and straight supply pipe to floor.

Furnished in white or colors.

No.		K-4500-A	K-4502-A
Size	inches	21¾x8x16¾	23½x8¼x18¾
Approx. Shipping Weight	lb.	66	81

Brompton Vitreous China High Tanks



No. K-4570-A

For Top Supply

Vitreous china high tank for top supply.

Automatic fittings. For chain pull fittings use suffix letter B instead of A.

Furnished in white only.

No.		K-4570-A	K-4572-A
Size	inches	15½x12½x2	19x12½x11
Capacity	gallons	3	6
Approx. Ship. Wt.	pounds	43	58

Rockwell Syphon Jet Closet Bowls

No. K4260-ET

With 2⅞-Inch Passageway For Flush Valve Only

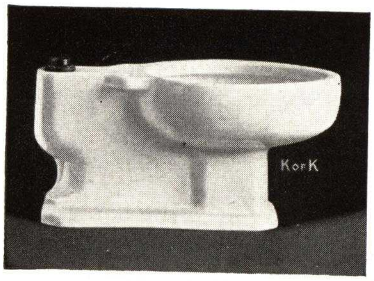
Vitreous china syphon jet closet bowl, with concealed twin priming jets and 1½-inch top inlet.

Also furnished with 1¼-inch spud.

		No. K-4260-ET Elongated	No. K-4260-PT Round Front
Center of Spud to Center of Outlet	in.	7½	7½
Approximate Shipping Weight	lb.	80	74

Furnished in white or colors.

Welland Syphon Jet Closet Bowls



No. K-4270-ET

With 2½-Inch Passageway For Flush Valve Only

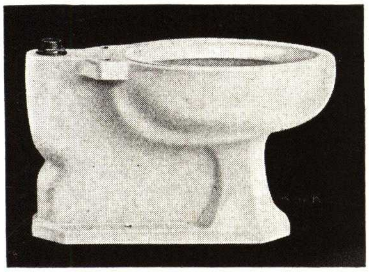
Vitreous china syphon jet closet bowl, with concealed twin priming jets and 1½-inch top spud.

Also furnished with 1¼-inch spud.

		No. K-4267-ET Elongated	No. K-4267-PT Round Front
Center of Spud to Center of Outlet	in.	6	6
Approximate Shipping Weight	lb.	58	56

Furnished in white or colors.

Penryn Syphon Jet Closet Bowls



No. K-4280-ET

With 2½-Inch Passageway For Flush Valve Only

Vitreous china syphon jet closet bowl, with concealed twin priming jets and 1½-inch top inlet.

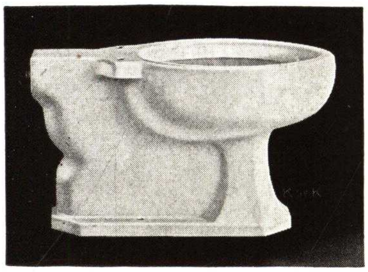
Also furnished with 1¼-inch spud.

	No. K-4280-ET Elongated	No. K-4280-PT Round Front
Center Spud to Center Outlet.....in.	6	6
Approx. Ship. Weight.............lb.	60	56

Furnished in white or colors.

Penryn Syphon Jet Closet Bowls

Elongated Pattern



No. K-4280-ER

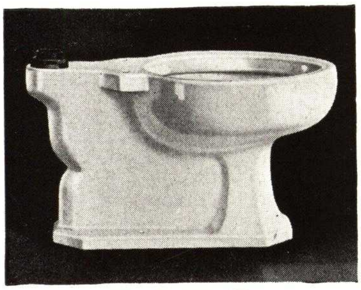
With 2½-Inch Passageway For Flush Valve Only

Vitreous china syphon jet closet bowl, with concealed twin priming jets, 1½-inch rear inlet, and china bolt covers.

Face of Spud to Center of Outlet.............inches	10½
Approximate Shipping Weight................pounds	64

Furnished in white only.

Downing Syphon Jet Closet Bowls



No. K-4291-ET

Regular Pattern

Vitreous china syphon action closet bowl with twin priming jets and 2-inch top spud.

Also can be furnished with 1¼ or 1½-inch spud.

	Elongated	Round Front
No.........................	K-4291-ET	K-4291-PT
Center of Spud to Center of Outlet..in.	8	8
Approximate Shipping Wt...lb.	63	57

Furnished in white and colors.

Darvel Syphon Jet Closet Bowls

No. K-4296-PT

With 2½-Inch Passageway For Flush Valve Only

Vitreous china syphon jet closet bowl with twin priming jets and 1½-inch top spud. Also can be furnished with 1¼-inch spud.

	No. K-4296-ET Elongated	No. K-4296-PT Round Front
Center of Spud to Center of Outlet...in.	8	8
Approximate Shipping Weight.......lb.	66	58

Furnished in white only.

Brooklands Reverse Trap Closet Bowls

No. K-4341-ER

Vitreous china reverse trap syphon action closet bowl with concealed twin priming jets and 2-inch back inlet.

Also can be furnished with 1¼ or 1½-inch spud.

	Elongated	Round Front
No..............................	K-4341-ER	K-4341-PR
Roughing-In.............inches	12	12
Approx. Shipping Weight. pounds	49	42

Furnished in white or colors.

Trent Wash-Down Closet Bowls

No. K-4360-PR

Round Front Pattern

Vitreous china wash-down closet bowl with jet, back outlet and 2-inch back inlet.

Also can be furnished with 1¼ or 1½-inch back inlet.

No...................	K-4360-PR	K-4361-PR	K-4362-PR	K-4363-PR
Roughing-In: For Tank.in.	12	12	10	17½
For Flush Valve....in.	11	9	7	14½
Approx. Ship. Wt.....lb.	35	35	45	45

Furnished in white or colors.

Regent Self-Raising Closet Seats

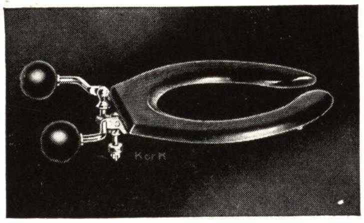
For Public Buildings

No. K-4738, For Elongated Bowls
No. K-4739, For Round Front Bowls

Oak finish open front closet seat with springe hinge.

Regent Self-Raising Closet Seats

For Public Buildings

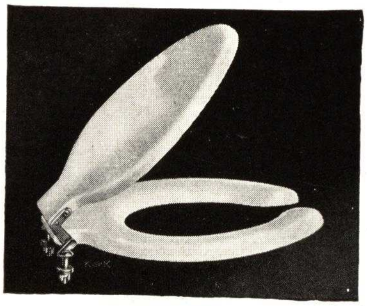


No. K-4740, For Elongated Bowls
No. K-4741, For Round Front Bowls

Oak finish open front closet seat with ball weighted hinge.

Ardwick Hygienic Closet Seats

For Elongated Bowls



No. K-4700

Sheet covered open front seat and cover, with chromium-plated, concealed hinge, and white bar bumpers.

Made from 1¼-inch stock.

Specify color when ordering.

With Cover

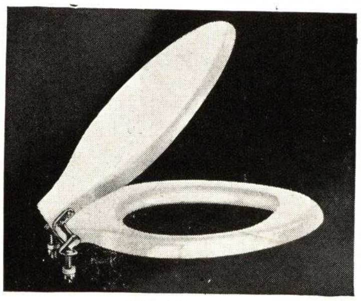
No. K-4700, plain white.
No. K-4700-P, plain colored.

Without Cover

No. K-4701, plain white.
No. K-4701-P, plain colored.

Ashbourne Hygienic Closet Seats

For Elongated Bowls



No. K-2702

Sheet covered closed front seat and cover, with chromium-plated, exposed bar hinge, and white bar bumpers.

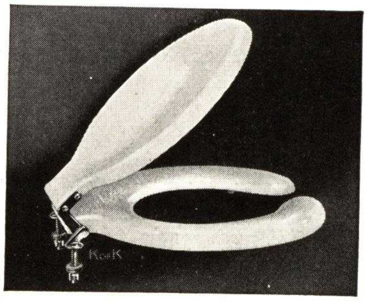
Made from 1¼-inch stock.

Specify color, when ordering.

No. K-4702, Plain white.
No. K-4702-P, Plain colored.

Balcombe Hygienic Closet Seats

For Round Front Bowls



No. K-4704

Sheet covered open front seat with cover and chromium-plated concealed hinge and white bar bumpers.

Made from 1¼-inch stock.

Specify color when ordering.

With Cover

No. K-4704, plain white.
No. K-4704-P, plain colored.

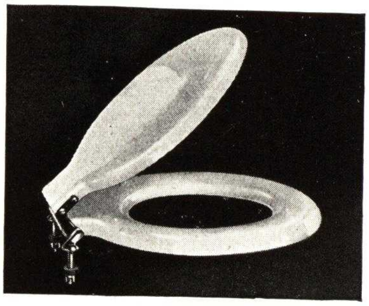
Without Cover

No. K-4705, plain white.
No. K-4705-P, plain colored.

Bramley Hygienic Closet Seats

For Round Front Bowls

With Cover



No. K-4706

Sheet covered closed front seat with cover and chromium-plated concealed hinge and white bar bumpers.

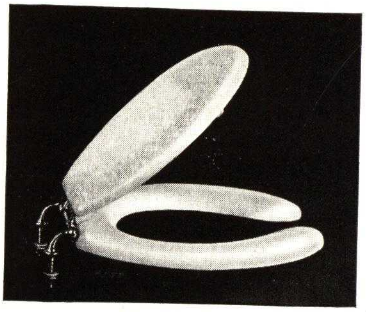
Made from 1¼-inch stock.

Specify color when ordering.

No. K-4706, plain white.
No. K-4706-P, plain colored.

Barrhill Regent Closet Seats

For Round Front Bowls



No. K-4724-T

Open front seat and cover, with chromium-plated, exposed bar hinge and white bar bumpers.

Made from 1¼-inch stock.

Specify finish when ordering.

With Cover

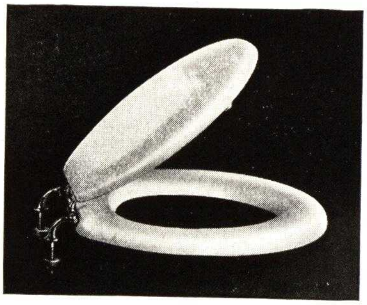
No. K-4724-T, Triko white coated finish.
No. K-4724-O, oak finish on wood.

Without Cover

No. K-4725-T, Triko white coated finish.
No. K-4725-O, oak finish on wood.

Bramhall Regent Closet Seats

For Round Front Bowls



No. K-4726-T

Closed front seat and cover with chromium-plated, exposed bar hinge and white bar bumpers.

Made from 1¼-inch stock.

Specify finish when ordering.

With Cover

No. K-4726-T, Triko white coated finish.
No. K-4726-G, oak finish on wood.

Without Cover

No. K-4727-T, Triko white coated finish.
No. K-4727-G, oak finish on wood.

Sperzel Self-Raising Closet Seats

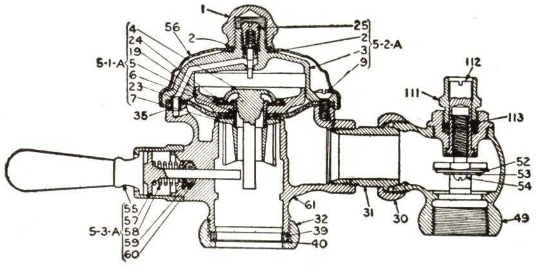
Seat consists of two black double-strength plastic seat pads connected by a plastic-covered steel yoke.

A self-raising seat, that stands perpendicular to the bowl when not in use.

The spring raising mechanism is a self-contained unit, enclosed in a plastic housing with a plastic cap.

	Black	White
No. LP20, For Regular Bowl.........each	.....	.....
No. LP20E, For Elongated Bowl.....each	.....	.....

Watrous Majestic Flush Valve Parts



Part No.	Name of Part	Each
1	Cap Nut to Conceal Regulating Screw.........	$.62
2	Fiber Washers for Cap Nut (2 Required).......	.05
3	Inside Cover..	3.72
4	Relief Valve..	.50
5	Weight for Diaphragm................................	.62
6	Guide for Relief Valve...............................	.37
7	Refill Disc..	.87
9	Screws for Inside Cover (5 Required)..........	.05
19	Rubber Seat Washer for Relief Valve..........	.07
23	Rubber Diaphragm....................................	.62
24	Wire Retaining Ring..................................	.05
25	Regulating Screw Complete........................	.74
30	Coupling Nut for Shut-Off..........................	.62
31	Coupling Nipple for Shut-Off.......................	.62
32	Coupling Nut for Flush Connection..............	.74
35	By-Pass Tube...	.05
39	Rubber Washer for Flush Connection..........	.10
40	Brass Friction Washer for Flush Connection...	.05
49	Shut-Off Body..	1.98
52	Rubber Seat Washer..................................	.05
53	Brass Seat Washer....................................	.05
54	Brass Seat Washer Screw...........................	.05
55	Handle Complete, Metal.............................	2.11
56	Shield or Outside Cover.............................	1.12
57	Operating Stem Complete...........................	.37
58	Spring for Operating Stem...........................	.15
59	Brass Retaining Ring for Handle Packing......	.12
60	Packing for Operating Stem.........................	.12
61	Valve Body..	8.68
111	Packing Nut and Lock Shield......................	.37
112	Shut-Off Stem Assembly, Complete............	1.36
113	Shut-Off Stem Only....................................	.50
114	Body Only for Straight Shut-Off..................	1.98

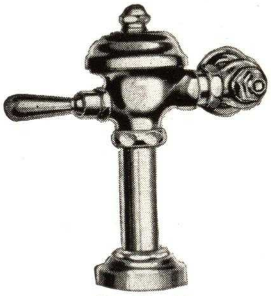
Partial Assemblies

5-1-A	Diaphragm Operating Unit, Complete.........	$3.10
5-2-A	Inside Cover Assembly, Complete..............	4.56
5-3-A	Handle Assembly, Complete......................	2.88

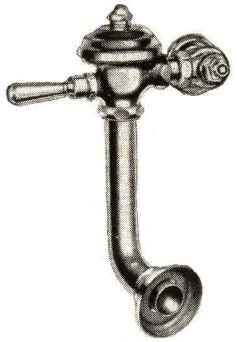
When ordering, give part No., name of part, and specify for Watrous Majestic flush valves.

Watrous Majestic Flush Valves

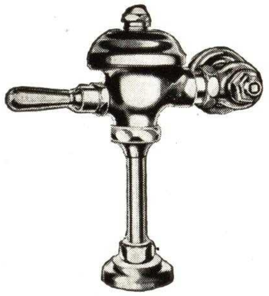
Diaphragm Type



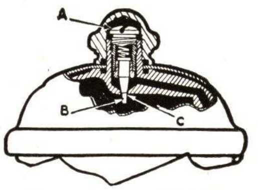
No. M-532



No. M-533



No. M-549



Sectional View of Top

Diaphragm type flush valve for use on all makes of fixtures and in all standard combinations. Provides uniform flush and refill at all pressures between 5 and 100 pounds.

Watrous water saver adjustment enables valve to be regulated to minimum water requirements of fixture on which it is installed by a slight turn of a screw; no need to take valve apart or even shut off water.

Self-cleansing by-pass is thoroughly cleansed at each operation of valve. This protects against lengthening of flushing time and assures trouble-free performance.

Full waterway. Large diaphragm area and full travel of unit at every flush enables this valve to operate successfully even on low pressures.

Ease of Operation. A slight pressure on the handle in any direction assures quick, thorough flushing.

The cross section illustrates Watrous water saver adjustment, showing how length of flush can be regulated. The procedure is to remove cap nut, exposing regulating screw "A". Screwing "A" in or out reduces or increases opening between plunger "B" and seat "C", thus increasing or decreasing length of flush to exact requirements of fixtures used. Once adjusted for a particular fixture the delivery is uniform and permanent.

Body of valve is of high grade bronze, finished in heavy chromium plate.

Exposed Type

No.	Description	Each
M-532	For Exposed Installation with Inlet to Right of Center Line of Top Spud Fixture........	.....
M-533	For Exposed Installation with Inlet to Right of Center Line of Rear Spud Fixture.......	.....
M-549	For Exposed Installation with Inlet to Right of Center Line of Top Spud Urinal.........	.....

Concealed Type

M-536	For Concealed Installation with Inlet to Left of Center Line of Rear Spud Floor Bowl....	.....
M-539	For Concealed Installation with Inlet to Left of Center Line of Rear Spud Wall Bowl.....	.....
M-541	For Concealed Installation with Inlet to Left of Center Line of Rear Spud Stall Urinal...	.....

No. 88 Watts Bronze Vacuum Breakers

Designed to prevent back-syphonage of polluted water from fixtures into the water supply lines.

Should be installed on all supply lines to fixtures where the supply enters below the overflow level of the fixtures.

In case of a vacuum being created in the water supply line, it closes the supply entrance and opens the outlet to atmosphere.

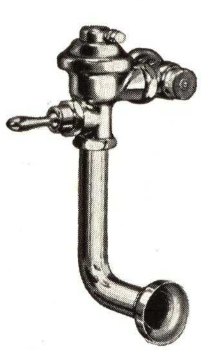
Made of bronze with a free-floating valve member, guided top and bottom. Should be installed at least 6 inches above the highest water level in the fixture.

Size	inches	½
No. **88**, Plain Brass, Satin Finish	each	**$3.00**
Female Connection, I.P.S.	inches	½
Weight	pounds	⅝

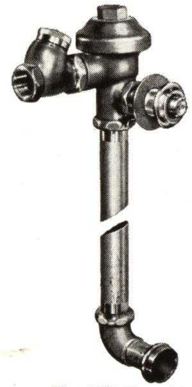
Sloan Royal Flush Valves

No. 120YG Royal, with metal handle, 1-inch wheel handle angle stop, elbow flush connection and coupling for 1½-inch exposed back spud, wall and spud flanges. Seat cover bumper on valve.

No. 152 Royal, concealed flush valve with c.p. push button suitable for wall 0 to 1-inch thick, 1-inch wheel handle straight stop, and 1½-inch slip joint brass flush connection.



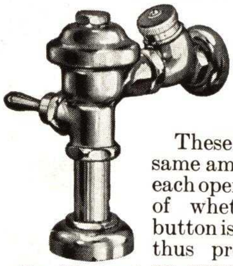
No. 120YG Royal



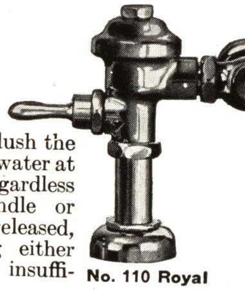
No. 152 Royal, Concealed

No. **120YG** Royal, Chromium Plated	each	....
No. **152** Royal, Concealed (Exposed Parts Chrome)	each	....

Sloan Royal Flush Valves



No. 100 Royal



No. 110 Royal

These valves flush the same amount of water at each operation regardless of whether handle or button is held or released, thus preventing either an excessive or insufficient flush.

They can be used on either direct or tank supply and do not require regulating for any variation in pressure.

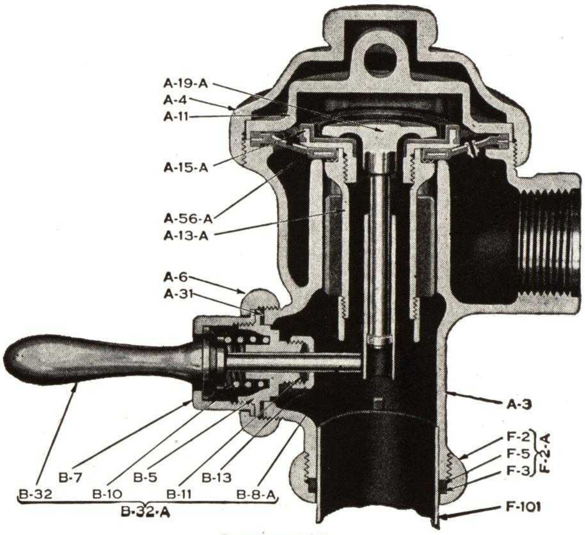
A slight movement of the oscillating handle in any direction causes the valve to flush.

No. 100 Royal, with metal handle, 1-inch wheel handle straight stop, flush connection and coupling for 1½-inch top spud, wall and spud flanges.

No. 110 Royal, with metal handle, 1-inch wheel handle angle stop, flush connection and coupling for 1½-inch top spud, wall and spud flanges.

No. **100** Royal, Chromium Plated	each	....
No. **110** Royal, Chromium Plated	each	....

Royal Flush Valve Parts



Sectional View

Delivers a uniform amount of water, then closes, regardless of how long the operating handle is held down.

Requires no adjustment for variations in water pressure. Has no screws or other regulating devices. Suitable for exposed or concealed installation; top, back or side inlet fixtures, with either handle or push button on front, right or left-hand side, with straight or angle controlling stop and with straight or elbow flush connection.

A slight movement of the handle or push button results in a quick, complete flush—no strength or special method of operation is required. The only moving part is a complete unit which operates without friction.

The metal used in this valve is a uniform high grade bronze, heavily plated.

When wall hung closets are used, they require a pressure, maintained at the valve, of not less than 25 pounds for blowout type, or 20 pounds for syphon jet type. Orders must state which type will be used.

All parts can be replaced as listed below.

Improved Royal Valve

No.	Name of Part	Each
A-4	Outside Cover	**$2.93**
A-11	Inside Cover	**1.47**
A-13-A	Guide	**1.17**
A-15-A	Disc Complete	**.59**
A-17	Relief Valve Seat	**.06**
A-19-A	Relief Valve	**.88**
A-56-A	Segment Diaphragm	**.82**

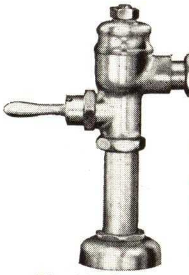
Improved Royal Outlet

F-2-AT	1½-Inch Outlet Coupling Assembly	**$.47**
F-3	1½-Inch Friction Ring	**.03**
F-5	1½-Inch S. J. Rubber	**.03**
F-2-ATU	1½x1¼-Inch Outlet Coupling Assembly	**.65**
G-42	1½x1¼-Inch S. J. Rubber	**.18**
G-44	1½x1¼-Inch Friction Ring	**.03**
F-101	1¼ or 1½x7-Inch Outlet	**.82**

Improved Royal Handle

B-32A	Metal Handle Assembled	**$2.34**
B-7	Handle Socket	**.71**
B-32	Metal Grip and Shank	**.94**
B-10	Handle Spring	**.18**
B-5	Handle Bushing	**.47**
B-11	Handle Packing	**.06**
B-13	Handle Packing Nut	**.12**
B-8A	Handle Plunger	**.30**
A-6	Handle Coupling	**.47**
A-31	Handle Gasket	**.03**
B-1A	China Handle Assembly	**2.34**
B-2	China Grip	**.47**
B-3A	Handle Shank	**.47**

Sloan Crown Flush Valves



No. 110 Crown

A handy screw adjusts the amount of flush to suit any fixture and requires no skill, no opening of the valve, no shutting off water, and no adjusting of by-pass.

By-pass and relief valve are both self-cleaning. Relief and main valve seats are renewable without special tools or grinding. The large waterway through valve permits operation with low pressures.

No. 100 Crown, chromium plated, with metal handle, 1-inch wheel handle straight stop, flush connection and coupling for 1½-inch top spud, wall and spud flanges.

No. 110 Crown, chromium plated, with metal handle, 1-inch wheel handle angle stop, flush connection and coupling for 1½-inch top spud, wall and spud flanges.

Sloan Crown Flush Valves

No. 120YG Crown

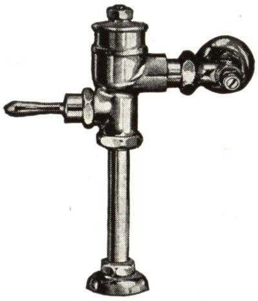
No. 120YG Crown, chromium plated, with metal handle, 1-inch wheel angle stop, elbow flush connection and coupling for 1½-inch exposed back spud, wall and spud flanges. Seat cover bumper on valve.

No. 152 Crown, concealed flush valve with exposed chromium plated metal push button, 1-inch wheel handle straight stop, 1½-inch slip joint brass flush connection. Push button suitable for wall 0 to 1-inch thick.

No. 152 Crown, Concealed

Sloan Flush Valves

No. 161 Royal



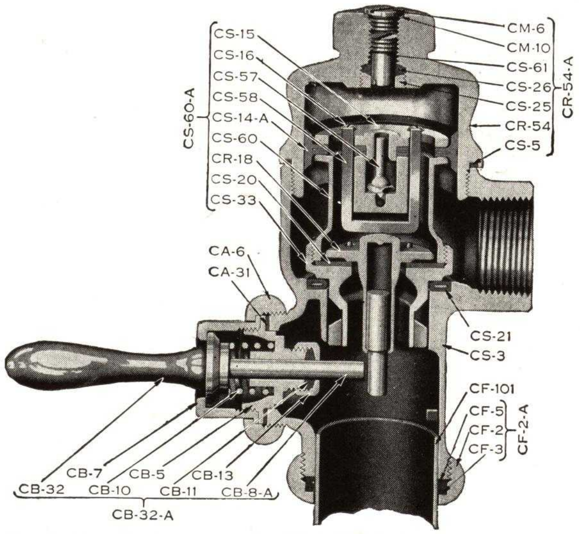
No. 185 Crown

No. 161 Royal. Seat operated, 1-inch loose key angle stop, flush connection and coupling for 1½-inch top spud, wall and spud flanges, adjustable bar check hinge and open front and back ebony composition seat for regular bowl.

Chromium plated.

No. 185 Crown. With metal handle, ¾-inch loose key angle stop and flush connection, and coupling for ¾-inch top spud, wall and spud flanges. Chromium plated. For washout urinals.

Crown Flush Valve Parts



A superior flush valve for fresh water in buildings.

Has a large waterway and delivers an efficient flush and refill at all pressures between 10 and 100 pounds on fixtures. When wall hung closets are used, they require a pressure, maintained at the valve, of not less than 25 pounds for blowout type, or 20 pounds for syphon jet type. Orders must state which type will be used. Has a handy screw that adjusts the flush to suit the fixture without shutting off the water. The Sloan Xpelor prevents clogging. All vital parts are of monel metal which resists wear and corrosion. Valve seats are renewable without special tools or grinding. Has a stable piston and anti-friction double cups.

Crown Valve

No.	Name of Part	Each
CS-60A	Sloco Piston Assembly	$4.39
CS-15	Top Plate	.59
CS-16	Top Plate Screw	.03
CS-37	Xpelor	.30
CS-58	Safety Bar	.12
CS-14A	Molded Double Cup	.53
CS-60	Piston Only	1.06
CR-18A	Relief Valve	.88
CS-20	Relief Valve Seat	.06
CS-33	Guide for Closet Valve	.88
CS-43	Guide for ¾-Inch Urinal Valve	.88
CM-6	Cover Screw	.18
CM-10	Cover Screw Gasket	.02
CR-54A	Crown Cover Assembly	3.51
CS-61	Regulating Screw	.18
CS-26	Regulating Screw Packing	.06
CR-25	Regulating Screw Packing Gland	.06
CS-5	Cover Gasket	.12
CS-21	Main Seat	.24

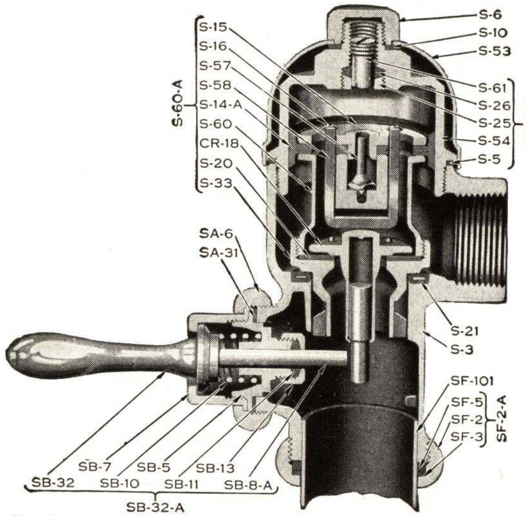
Crown Outlet

CF-2-AT	1½-Inch Outlet Coupling Assembly	$.47
CF-3	1½-Inch Friction Ring	.03
CF-5	1½-Inch S.J. Rubber	.03
CF-2ATU	1½x1¼-Inch Outlet Coupling Assembly	.65
CF-105	1½x1¼-Inch S.J. Rubber	.18
CG-44	1½x1¼-Inch Friction Ring	.03
CF-101	1½ or 1¼x7-Inch Outlet	.82

Crown Handle

CB-32A	Metal Handle Assembled	$2.34
CB-7	Handle Socket	.71
CB-32	Metal Grip and Shank	.94
CB-10	Handle Spring	.18
CB-5	Handle Bushing	.47
CB-11	Handle Packing	.06
CB-13	Handle Packing Nut	.12
CB-8A	Handle Plunger	.30
CA-6	Handle Coupling	.47
CA-31	Handle Gasket	.03
CB-1A	China Handle Assembly	2.34
CB-2	China Grip	.47
CB-3A	Handle Shank	.47

Star Flush Valve Parts



A fresh water flush valve for buildings of every type.

Has a large waterway and delivers an efficient flush and refill at all pressures between 10 and 100 pounds on plumbing fixtures of any manufacture.

A handy screw easily adjusts the flush to suit the fixture without shutting off the water. The Sloan Xpelor prevents clogging. All vital parts are of monel metal which resists wear and corrosion. A stable piston insures dependable operation. Has double cups.

When wall hung closets are used, they require a pressure, maintained at the valve, of not less than 25 pounds for blowout type, or 20 pounds for syphon jet type. Orders must state which type will be used.

All parts can be replaced as listed below.

Star Valve

No.	Name of Part	Each
S-60-A	Sloco Piston Assembly	$4.39
S-15	Top Plate	.59
S-16	Top Plate Screw	.03
S-57	Xpelor	.30
S-58	Safety Bar	.12
S-14-A	Double Cups	.53
S-60	Stable Piston	1.06
CR-18-A	Relief Valve	.88
S-20.	Relief Valve Seat	.06
S-33	Guide for Valve with 1-Inch Inlet	.88
S-43	Guide for ¾-Inch Urinal Valve	.88
S-6	Cover Nut	.36
S-10	Cover Nut Gasket	.03
S-53	N. P. Outside Cover	.59
S-54-A	Inside Cover Assembled	2.34
S-61	Regulating Screw	.18
S-26	Regulating Screw Packing	.06
S-25	Regulating Screw Packing Gland	.06
S-5	Cover Gasket	.12
S-21	Main Seat	.24

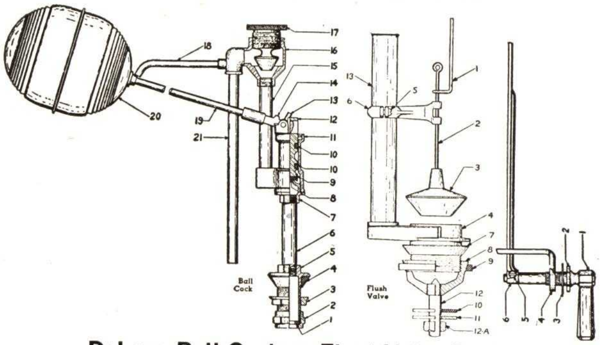
Star Outlet

SF-2-AT	1½-Inch Outlet Coupling Assembly	$.47
SF-3	1½-Inch Friction Ring	.03
SF-5	1½-Inch S.J. Rubber	.03
SF-2-ATU	1½x1¼-Inch Outlet Coupling Assembly	.65
F-105	1½x1¼-Inch S.J. Rubber	.18
G-44	1½x1¼-Inch Friction Ring	.03
SF-101	1¼ or 1½x7-Inch Outlet	.82

Star Handle

SB-32-A	Metal Handle Assembled	$2.34
SB-7	Handle Socket	.71
SB-32	Metal Grip and Shank	.94
SB-10	Handle Spring	.18
SB-5	Handle Bushing	.47
SB-11	Handle Packing	.06
SB-13	Handle Packing Nut	.12
SB-8-A	Handle Plunger	.30
SA-6	Handle Coupling	.47
SA-31	Handle Gasket	.03
SB-1-A	China Handle Assembled	2.34
SB-2	China Grip	.47
SB-3-A	Handle Shank for China Handle	.47

Repair Parts for No. 1200 DeLuxe Water Saver Closet Combinations



DeLuxe Ball Cock or Float Valve Parts

Part No.	Name of Part	Part No.	Name of Part	Part No.	Name of Part
1	Cplg. Nut Washer	8	Seat Washer	15	Silencer Tube
2	Coupling Nut	9	Seat Washer Cap	16	Silencer Body
3	Lock Nut	10	Plunger Packing	17	Silencer Adj.
4	Shank Washer	11	Ball Cock Body	18	Refill Tube
5	Shank	12	Plunger	19	Float Rod
6	Supply Tube	13	Thumb Screw	20	Float
7	Seat	14	Float Rod Lever	21	Hush Tube

DeLuxe Flush Valve Parts

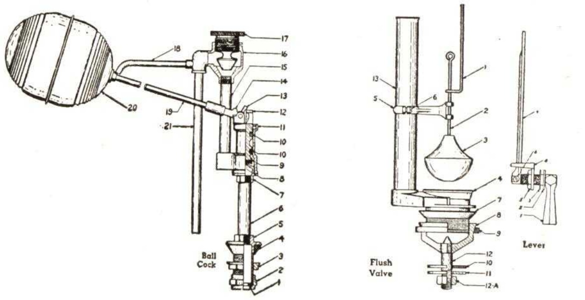
1	Swivel Wire	6	Guide	11	Brass Washer
2	Lift Wire	7	Rubber Gasket	12	Stud Bolt
3	Rubber Ball	8	Lock Nut	12A	Stud Bolt Nut
4	Seat	9	Rubber Gasket	13	Overflow Tube
5	Guide Screw	10	Rubber Washer	..	....

DeLuxe Water Saver Lever Parts

1	Chrome Handle	3	Rubber Washer	5	Lift Arm Screw
2	Bushing	4	Hanger	6	Lift Arm

Prices upon application.

Repair Parts for No. 1325 Camel Water Saver Closet Combinations



Water Saver Ball Cock or Float Valve Parts

Part No.	Name of Part	Part No.	Name of Part	Part No.	Name of Part
1	Cplg. Nut Washer	9	Seat Washer Cap	17	Silencer Adjuster
2	Coupling Nut	10	Plunger Packing	18	Refill Tube
3	Lock Nut	11	Ball Cock Body	19	Float Rod
4	Shank Washer	12	Plunger	20	Float
5	Shank	13	Thumb Screw	21	Hush Tube
6	Supply Tube	14	Float Rod Lever	..	....
7	Seat	15	Silencer Tube	..	....
8	Seat Washer	16	Silencer Body		

Water Saver Flush Valve Parts

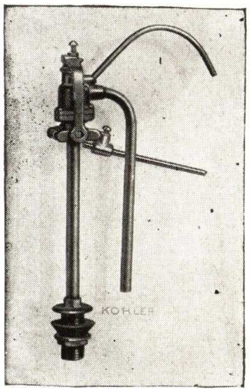
1	Swivel Wire	6	Guide Screw	11	Brass Washer
2	Lift Wire	7	Rubber Gasket	12	Stud Bolt
3	Rubber Ball	8	Lock Nut	12A	Stud Bolt Nut
4	Seat	9	Rubber Gasket	13	Overflow Tube
5	Guide	10	Rubber Washer	..	....

Water Saver Lever Parts

1	Chromium Lever	4	Hanger	7	Lift Arm
2	Bushing	5	Lock Nut	..	....
3	Rubber Washer	6	Screw	..	....

Prices upon application.

No. K-9255 Ball Cocks or Float Valve



For Low Tanks

An improved float valve for low tanks.

Simple and positive in action.

Furnished with china seat, refill tube, float rod, lock nut, coupling nut with washer, and 2-inch shank.

No. 9256 Same as above except for 20 inch tank.

Duck-Bill No-Tone Brass Ball Cocks or Float Valves

The hush tube (flattened like a duck bill) shapes the discharge into a ribbon-like stream which flows silently into the water in the tank.

The 2-speed linkage permits adjustment for a snap shut-off at any pressure between 30 and 150 pounds.

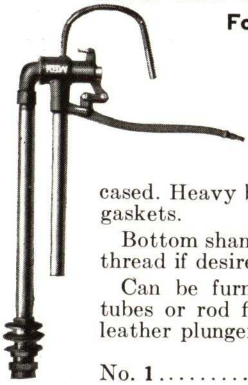
Linkage has only one eye screw; permits all close-rough installations.

Furnished with repair (long) shank and slip-joint connection. Standpipe and shank are one-piece casting. Graphited asbestos packing ring. Monel metal seatwasher screw does not corrode. Has sweat soldered connection between cast standpipe and body.

Each.............................. ....

No. 1 Rockford Elevated Compound Lever Ball Cocks or Float Valves

For Low Tank



Bottom shank threaded 5/8-14.

Refill tube 1/4-inch annealed brass 8 inches long. Regularly furnished with cast brass float arm with double thread 1/4x20 and 3/8x20. Plunger seat disc incased. Heavy beveled rubber shank and union nut gaskets.

Bottom shank can be furnished 3/4-inch I. P. size thread if desired.

Can be furnished at extra charge with refill tubes or rod float arms any desired length, cup leather plungers and special long 2⅝-inch shank.

No. **1**...............................each .....

No. 4 Rockford Compound Lever Ball Cocks or Float Valves

Top Supply for High Tank

Cast brass elbow with 1/2-inch union top supply connection with tail piece threaded 3/8-inch male I.P. Discharge tube, 5/8-inch, No. 20 brass, 5½ inches. Regularly furnished with cast brass float arm with double thread 1/4x20 and 3/8x20.

Plunger seat disc incased.

Tank bracket cast on body.

Can be furnished 1/2, 5/8, or 3/4-inch I. P. thread at union connection.

No. **4**...............................each .....

With cup leather plunger at extra cost.

No. 4-0577

Same as above except has short arm and is tapped 1/4x20.

No. **4-0577**..........................each .....

No. 5 Rockford Compound Lever Ball Cocks or Float Valves

Bottom Supply for High Tank

Bottom shank thread 5/8-14. Extra heavy rough N.P. locknut and union nut with male tail piece threaded 3/8-inch I.P. Cast brass float arm with double thread 1/4x20 and 3/8x20. Heavy flat rubber shank and union nut gaskets. Bottom shank can be furnished threaded 3/4-inch I.P. or 1/2-inch I.P. if desired.

Price, No. **5**...............each .....

Furnished at extra cost with cup leather plunger and special long 2⅝-inch shank.

Nos. 5-0576, 5-0577, 5-0579

Same but has short arm; tapped 1/4x20.

No.	0576	0577	0579
Price...each	....	....	....

No. 7½ Rockford Elevated Compound Lever Ball Cocks or Float Valves

For Low or High Tank

Especially adaptable to repair work because of its many features designed for that purpose.

The extra large body contains a chamber to reduce noise to a minimum.

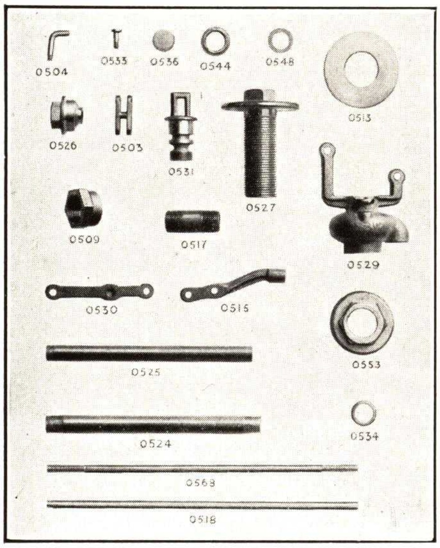
The special large flange and packing nut are particularly suitable for use in old tanks as they will in most cases make it unnecessary to reline the tank.

A brass nipple is provided to change from low to high tank.

Shank is 2⅝ inches long and is threaded 5/8 by 14 inches. Supply tube is 1/4-inch full I.P.S. seamless tubing.

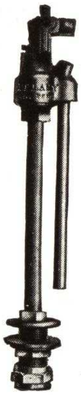
No. **7½**......................each .....

Parts for No. 7½ Rockford Elevated Compound Lever Ball Cocks or Float Valves



No.	Description	Each	No.	Description	Each
0503	Link	**$.10**	**0526**	Body Seat Casting	**$.30**
0504	L Screw	**.05**	**0527**	Shank	**.45**
0509	Union Nut	**.15**	**0529**	Body	**.85**
0513	Rubber Shank Gasket	**.10**	**0530**	Eccentric	**.10**
0515	Short Cast Float Arm	**.15**	**0531**	Plunger Casting	**.50**
0517	1/4x1½-Inch Brass Nipple	**.15**	**0533**	Special Screw	**.02**
0518	9-Inch Refill Tube	**.15**	**0534**	Plunger Disc Holder	**.08**
0524	Supply Tube	**.40**	**0536**	Rubber Seat Disc	**.02**
0525	Discharge Tube	**.20**	**0544**	Union Gasket	**.02**
			0548	Plunger Leather	**.02**
			0553	Locknut	**.25**
			0562	8-In. Float Rod	**.20**

Delany Quiet Acting Ball Cocks or Float Valves



The Delany Ball Cock has a simple single one pin assembled leverage with compensating arm which prevents any sticking or freezing of plunger. This leverage is stronger than compound leverage.

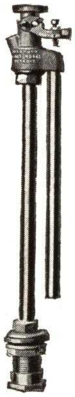
It operates more quietly as it approaches the close and will close off without a squeal or whistle.

This valve has no overhanging leverage parts and will fit into any tank regardless of drilling.

Has cast brass stand pipe and solid bronze seat.

Each ....

Also furnished with extra long shank for repair work.



No. 66 Sherwood Ball Cocks or Float Valves

Elevated Pattern for Low Tanks

All cast parts made of bronze with steam metal seat. One pin holds all parts in place.

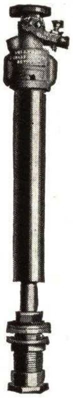
Positive under any pressure and practically noiseless.

Furnished regular with 10-inch refill and 9-inch float rod.

Height, 8 3/4 inches.

No. **66**.......................................each ....

No. 77 Sherwood Ball Cocks or Float Valves



For Low Tank

Elevated pattern ball cock with 1-inch brass hush tube over cast supply.

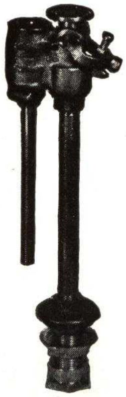
Positive under any pressure and practically noiseless.

Castings are of bronze, with steam metal seat.

Regular shank, 15/16 inch diameter, 1 7/8 inches long; for 3/8-inch I.P. slip joint connection.

Can also be furnished with hard rubber hush tube.

No. 86 Sherwood Anti-Syphon Ball Cocks or Float Valves



Fills the tank quickly and quietly. Has no restrictions to clog. Meets code requirements.

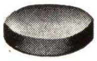
Standard height, 13 1/2 inches. Other heights furnished on request.

All threads are 1/4-inch I.P.S.

Boxed with 8-inch refill and 9-inch rod.

Float Valve Repair Parts

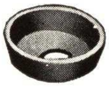
Rubber Seat Washers



No.	Per 100	O.D. Inches	No.	Per 100	O.D. Inches
669	...	1/2	**674**A	...	11/16
670	...	9/16	**674**B	...	3/4
671	...	19/32	**676**	...	13/16
672	...	5/8	**673**	...	7/8
674	...	21/32	.....	...	...

Cup Plunger Leathers

Made of calfskin.



No.	Per 100	O.D. Inches	No.	Per 100	O.D. Inches
690	...	9/16	**694**	...	11/16
692	...	5/8	...	...	...

Felt Plunger Packings

No. **688**, 3/4-Inch O.D., Wolf Style	per 100	...
No. **689**, 11/16-Inch O.D., Douglas Old Style	per 100	...
No. **691**, 11/16-Inch O.D., Douglas New Style	per 100	...

Split Plunger Leathers

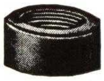
No.	**703**	**703**A	**703**B
Per 100	....	....	....
O.D. ... inches	11/16	23/32	3/4
Thickness ... inches	1/8	1/8	1/8

Coupling Nut Washers

No. **701**, Leather	per 100	....
No. **701**A, Fiber	per 100	....
No. **704**, Slip Joint Rubber	per 100	....

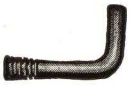
Seat Caps

For M-V-B, Douglas, Wolf, Paragon and other styles.



No.	Per 100	O.D. In.	No. Thrds.	No.	Per 100	O.D. In.	No. Thrds.
706	...	5/8	24	**710**	...	3/4	30
707	...	11/16	26	**711**	...	3/4	28
708	...	11/16	27	**712**	...	51/64	27
709	...	47/64	30	...	...	...	..

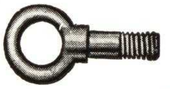
Leverage Screws



Bent lever.

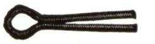
No.	**699**	**700**
Per 100	...	...
Size ... inches	1/2x3/4	5/8x1 5/16

Cast Thumb Screws



No.	**698**	**698**A	**698**B	**698**C
Per 100	...	...	...	..
Length... inches	9/16	3/4	1	1 3/8

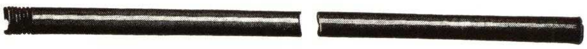
No. 702 Brass Cotter Pins



Size, 5/32x1-inch.

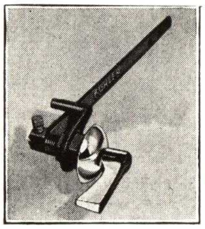
No. **702**......................per 100 ....

No. 2374 Annealed Brass Refill Tubes



Annealed brass tubing, 1/4-inch o.d. Threaded one end.

Size ... inches	10	16
No. **2374** ... each	....	....

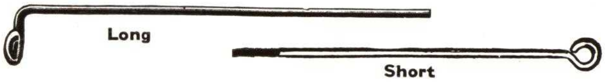


No. K-9400 Kohler Tank Trip Levers

Single-acting trip lever with chromium-plated metal handle.

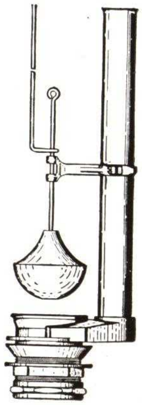
No. **K-9400**................each ....

Lift Wires



	Short		Long
No.	**1049**	**1049**A	**1050**
Length ... in.	4 3/4	6	9
Per 100	....	....	....

No-Trouble Flush Valves

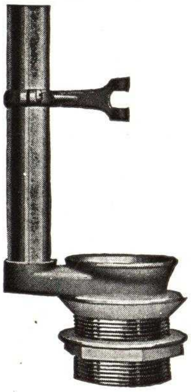


For Low Tanks

Has heavy cast red metal base and lock nut with 1⅛-inch swedged overflow tube.

Fitted with special quality flush ball.

No. 1043 Flush Valves



A 2½-inch flush valve of heavy cast brass with extra wide flange.

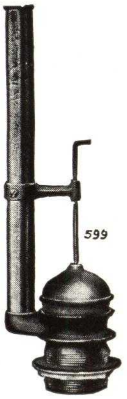
1 inch., O.D. Overflow tube.

Lift wires furnished with the valve.

No. **1043**....................................each **$1.80**

No. 599 Frost Type D Flush Valves

For Low Tanks

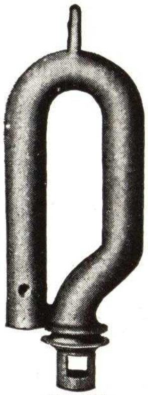


Cast brass flush valve with seamless tube standpipe, copper lift wires, brass seat, and cast brass lock nut.

Size, 2½ inches.

Furnished with or without rubber float.

Gooseneck Syphons and Seats



No. 18

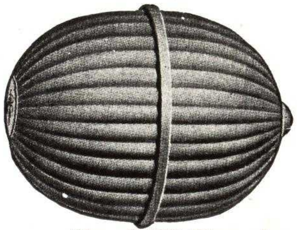
No. 18 Gooseneck Syphons

Size.........inches	1¼	1⅜	1½
No. **18**, Galvanized ....each	....	....	....

No. 606 Gooseneck Syphon Seats

Size.........inches	1¼	1⅜	1½
No. **606**, Nickel-Plated Brass.each	....	....	....
No. **606**, Chromium-Plated.......each	....	....	....

No. 1060 Solderless Copper Floats



Size, 4x5 inches.

Spud tapped.

No. 14, 20 thread.

No. **1060**.........each ....

No. 6822 Regular Brass Float Rods

Length..............inches	6	7	8	9	10
No. **6822**.........per dozen	....	....	....	....	....

With One End Threaded Regular and Float Ball End with Running Thread for Adjustment

Length...................inches	6	8	10	12
No. **6822**...............per dozen	....	....	....	....

No. 1065 Float Rods

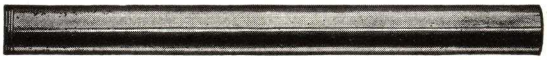
Size, ¼ inch by 8 inches long. Threaded ¼ inch; 20 thread. One end, 1 inch; other end, 2¼ inches.

No. **1065**..................................per 100 ....

No. 363 Brass Threaded Rods

Length........inches	12	24
Diameter..... inches	¼	¼
No. **363**.........each	....	..

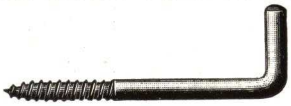
Overflow Tubes for Flush Valves



Length, 11 inches.

No..............................	**2368**	**2370**	**2372**
Unfinished Brass...............each	....	....	....
Outside Diameter............inches	1	1⅛	1¼
Brown and Sharpe Gauge...........	20	20	20

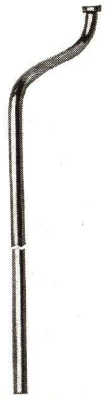
No. 12152 Closet Tank Screw Hooks



Length.................................inches	2⁄16
Price, Steel............................per gross	.....
" Brass.................."	.....

High Tank Supply Pipes

No. 798 Straight



No. 799 Offset

Regularly furnished with collar for ball cock coupling nut.

Wrapped in paper individually.

No. 798 Straight

O.D. In.	N.P. Each	C.P. Each	Gage	Length Feet
⅝	....	....	17	7
21⁄32	....	....	Full ⅜-In. I.P.	7
21⁄32	....	....	14	7

No. 790 Offset

O.D. In.	N.P. Each	C.P. Each	Gage	Length Feet
⅝	....	....	17	7
21⁄32	....	....	Full ⅜-In. I.P.	7
21⁄32	....	....	14	7

High Tank Flush Pipes

No. 796 Straight

No. 797 Offset

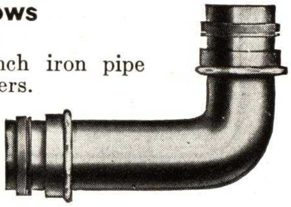
Regularly furnished with collar for 1½-inch I.P. connection. Can be furnished with single ring when specified.

Wrapped in paper individually.

Size In.	No. 796, Straight N.P.	No. 796, Straight C.P.	No. 797, Offset N.P.	No. 797, Offset C.P.	Gage	Lgth. Ft.
1¼	....	....	....	....	22	5½
1¼	....	....	....	....	20	5½
1¼	....	....	....	....	22	6
1¼	....	....	....	....	20	6
1¼	....	....	....	....	17	6
1⅜	....	....	....	....	22	6
1⅜	....	....	....	....	17	6
1½	....	....	....	....	22	5½
1½	....	....	....	....	20	5½
1½	....	....	....	....	17	5½
1½	....	....	....	....	22	6
1½	....	....	....	....	20	6
1½	....	....	....	....	17	6

Slip Joint Elbows

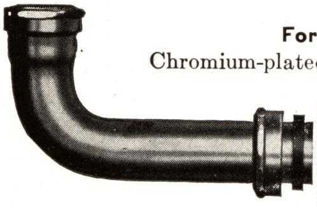
For Low Tank



Chromium-plated, with 2-inch iron pipe size cast nuts and rubber washers.

No.	Size Inches	No.	Size Inches
871	3½x5	**875**	5x 8
880	4 x6	**876**	6x 8
1677	5 x7	**4152**	8x12

For High Tank

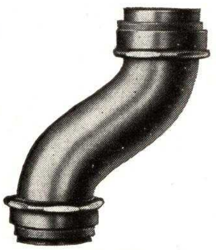


Chromium-plated, with nuts and washers.

No.	Spud In.	Inlet In.	Length In.
347	1¼	1¼	6
351	1¼	1¼	8
348	1¼	1½	6
350	1½	1½	6

Closet Flush Connections

Chromium-plated, two 2-inch iron pipe thread nuts and rubber washers.


No. 888, Offset

Offset Connections

No.	Each	Offset In.	Lgth. In.
3153	....	1	6
885	....	1½	6
886	....	2	6
887	....	2½	6
888	....	3	6
889	....	3½	6
890	....	4	6

Straight Connections

No.	Each	Offset In.	Lgth. In.
1497	....	...	6

No. 1497, Straight

Brass Closet Floor Flanges

Top

Bottom

Has ridge underneath bolt slots to prevent bolts from turning while being tightened.

Large opening for bolt heads, through which bolts can be inserted after flange is in place.

Size No.	1	2	3
Each	....	....	....
Weight, ounces	19	14	9

Blake Cast Iron Slip Collars

For Closet Bends

No. 370 Notched Top

Extra heavy pattern with 4-inch inlet, 4-inch outlet.

Also furnished with 3-inch inlet, 3-inch outlet, 2½ inches deep for slop sinks, or for 3-inch closet bends.

Depth, inches	**1½**	**2**	**2½**	**3**	**4**	**5**	**6**	**8**
No. **370**, each	**$.24**	**.30**	**.30**	**.50**	**.60**	**1.20**	**1.40**	**2.24**
Weight, pounds	2	2¾	3½	3½	4½	7	7½	10

Special 3-in. inlet, 3-in. outlet, 2½-in. deep, 50 cents.

No. 375 Slotted Top

Extra heavy pattern 4-inch inlet, 4-inch outlet. Also furnished with 4-inch inlet, 3-inch outlet, 2½ inches deep.

Depth, inches	**2**	**2½**	**3**	**4**	**5**	**6**	**8**
No. **375**, each	**$.30**	**.30**	**.50**	**.60**	**1.20**	**1.40**	**2.24**
Weight, pounds	2¾	3½	3½	4½	7	7½	10

Special 4-in. inlet, 3-in. outlet, 2½ in. deep, 50 cents.

No. 1051 Hexagon Cap Nuts

For Closet Screws

Tapped 14–20. Packed 144 in a box.

No. **1051**, Nickel-Plated	per 100	.....
No. **1051**, Chromium-Plated	per 100	.....

No. 1053 Oval Washers

For Closet Screws or Bolts

O. D. hole, 5/16 inch. Packed 144 in a box.

No. **1053**, Nickel-Plated	per 100	.....
No. **1053**, Chromium-Plated	per 100	.....

No. 1054 Brass Closet Screws

Threaded 14–20.
Length, 2⅜ inches.

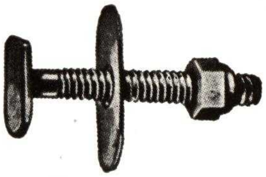
No. **1054**, Unfinished	per 100	.....

No. 1056 Combinations

Consists of No. 1051 Hexagon Cap Nut, No. 1053 Washer, and No. 1054 Screw. Packed 100 of each part in a box.

No. **1056**, Nickel-Plated	per 100 sets	.....
No. **1056**, Chromium-Plated	per 100 sets	.....

Dearborn Brass Closet Flange Bolts



Threaded ¼ inch, 20.
Wrought brass unfinished.
Packed 100 in a box.

No. **1063**, length under head, 1¾ inches.

No. **1063A**, length under head, 2¼ inches.

No. 9/16XW Lucky Strike New Style Toilet Bowl Cushion Rings

Extra Wide

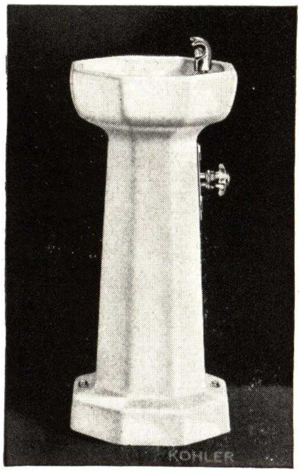
Sponge rubber. I.D., 3¼ inches; O.D., 7 inches.

Thickness, 9/16 inch. One in a standard package. Weight, ⅜ lb.

No. RSFFR Lucky Strike Floor Flange Cushion Rings

Made of soft, tan sponge rubber, eliminating use of putty and oil. I.D., 3½ inches; O.D., 5⅜ inches; thickness, ¾ inch.

Standard package, 50; weight 15 pounds.



No. K-5300-A

Carisbrook Vitreous China Pedestal Drinking Fountain with integral bowl and pedestal.

Fittings, angle stream non-squirting bubbler with self-closing controlling valve adjustable for continuous flow, with renewable seat, and metal 4-arm handle; automatic volume regulator; drain connection with perforated strainer and connections for 1¼-inch I.P.S. outlet; 2 floor screws with washers.

Supply pipe, ⅜-inch I.P. size to floor with screwdriver regulating stop.

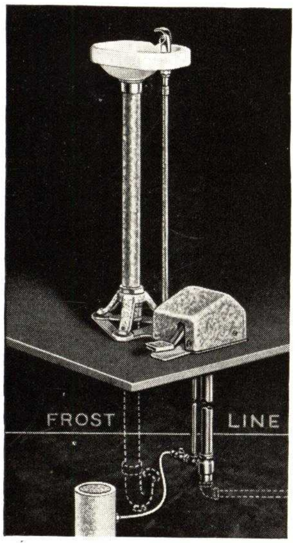
Trap, not furnished.

Diameter of Bowl	inches	13¼
Height, Floor to Rim	inches	30
Approximate Shipping Weight	pounds	74

Drain pipe to floor not furnished.

Provision must be made for installation of trap below floor.

Furnished in white or colors.



No. K-5312-A

Sunnybrook Freeze-Proof Drinking Fountain with vitreous china bowl Supported on painted iron combined pedestal and drain.

Fittings, angle stream non-squirting vandal-proof bubbler with automatic volume regulator; brass self-draining pedal action supply valve with 2 vermin-proof ball checks and brass air vent pipe with screened top, *vandal-proof cover, galvanized supporting plate; drain connection with strainer.

Supply pipe, valve to bubbler, ⅜-inch I.P.S. galvanized steel.

Trap, not furnished.

Exposed brass chromium plated.

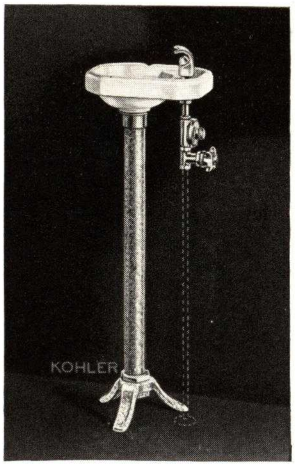
Size of Bowl	inches	11x7½	11x7½
Height, Floor to Rim	inches	30	36
Approximate Shipping Weight (Fountain and Standard Only)	pounds	29	30

Specify if 18, 36, 48, or 60-inch bury is required.

*Lock not furnished.

Furnished in white or colors.

Drainage should be provided below frost line as illustrated, using a length of drain tile filled with gravel.



No. K-5310-A

Sunnybrook Pedestal Drinking Fountain with vitreous china bowl and overflow in rear to prevent back-syphonage. Supported on painted iron combined pedestal and drain.

Fittings, angle stream non-squirting vandal-proof bubbler with self-closing controlling valve adjustable for continuous flow, with renewable seat and metal 4-arm handle; automatic volume regulator; drain connection with strainer.

Supply pipe, not furnished.

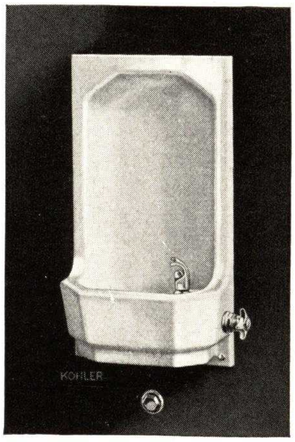
Trap, not furnished.

Exposed brass chromium plated.

Size of Bowl	inches	11x7½	11x7½
Height, Floor to Rim	inches	30	36
Approx. Ship. Wt.	pounds	30	30

Provision must be made for installation of trap below floor.

Furnished in white or colors.



No. K-5325-A

Glenbrook Vitreous China Alcove Drinking Fountain with wall flange. Supported on wall screws.

Fittings, angle stream non-squirting bubbler with self-closing controlling valve adjustable for continuous flow, with renewable seat and metal 4-arm handle; automatic volume regulator; concealed stop with screwdriver slot; strainer with coupling nut and 1¼-inch tail-piece; 3 wall screws.

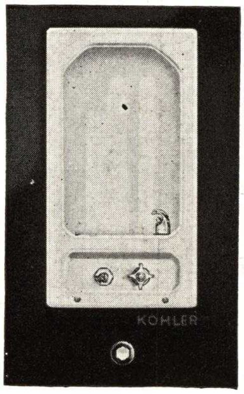
Supply pipe, not furnished.

Trap 1¼-inch P pattern, concealed with cleanout at face of finished wall.

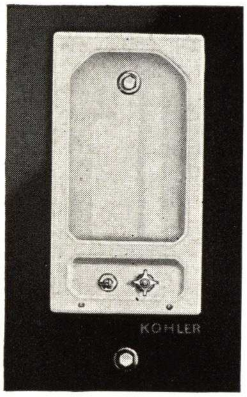
Exposed metal chromium plated.

Width Overall	inches	14¾
Height Overall	inches	26¼
Projection from Wall	inches	6¾
Depth of Recess	inches	4½
Approximate Shipping Weight	pounds	68

Furnished in white or colors.



No. K-5331-A



No. K-5332-A

Drinking Fountain and Cuspidor Combinations

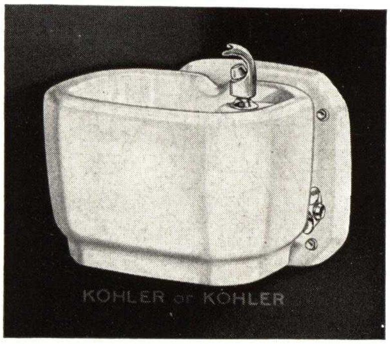
Drinking Fountain: **Vanbrook Vitreous China Recess Drinking Fountain** with wall flange. Supported on wall screws.

Fittings: Angle stream non-squirting bubbler with self-closing valve adjustable for continuous flow, renewable unit, metal 4-arm handle and automatic volume regulator; concealed stop with metal escutcheon and screw driver slot; metal strainer with coupling nut and 1¼-inch tail-piece; cast brass trap with cleanout extension to wall.

Cuspidor: **Vanguard Vitreous China Recess Cuspidor** with wall flange. Supported on wall screws.

Fittings: Flushing spreader with ⅜-inch I.P.S. slip inlet; self-closing valve with regulating stop; strainer with 1¼-inch tail-piece; cast brass trap with cleanout extension.

Height Overall	inches	30
Width Overall, Each	inches	16½
Inside Depth Front to Back	inches	10
Depth Overall, Front to Back	inches	11
Approximate Shipping Weight	pounds	160



No. K-5335-A

Daybrook Vitreous China Drinking Fountain with overflow at rear of bowl. Supported on four wall screws.

Fittings: Guarded angle stream non-squirting bubbler with self-closing controlling valve, renewable seat, metal 4-arm handle, automatic volume regulator, and metal strainer.

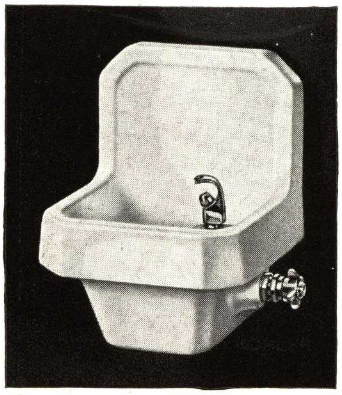
Supply Pipe: ⅜-inch I.P. size to wall with screwdriver regulating stop.

Trap: Brass, 1¼-inch P pattern with I.P.S. outlet.

Exposed Metal: Chromium-plated.

Wall to Front	inches	14
Width Overall	inches	14
Approximate Shipping Weight	pounds	40

Furnished in white or colors.



No. K-5340-A

Rockbrook Vitreous China Drinking Fountain with integral back and trap housing. Supported on wall hanger.

Fittings: Angle stream non-squirting bubbler with self-closing controlling valve adjustable for continuous flow, renewable unit, metal 4-arm handle, and automatic volume regulator; metal strainer with coupling nut and 1¼-inch tail-piece.

Supply Pipe: ⅜-inch I.P. size to wall with loose key stop.

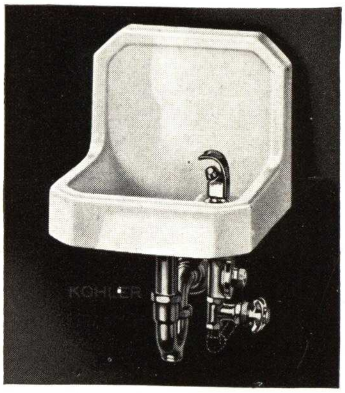
Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Size of Bowl	inches	12x12x16
Wall to Front of Bowl	inches	12
Height of Back	inches	8
Approximate Shipping Weight	pounds	40

Elevated bubbler head above rim of bowl eliminates possible contamination of water by back syphonage.

Furnished in white or colors.



No. K-5345-A

Deerbrook Vitreous China Drinking Fountain with back. Supported on concealed wall hangers.

Fittings: Angle stream non-squirting vandal-proof bubbler with self-closing controlling valve adjustable for continuous flow, renewable unit, metal 4-arm handle, automatic volume regulator; metal strainer with coupling nut and 1¼-inch tail-piece.

Supply Pipe: Not furnished.

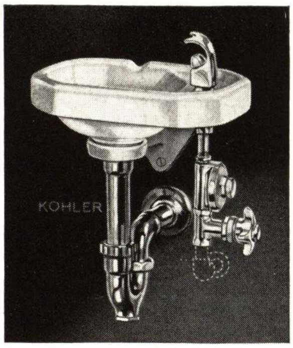
Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Size of Bowl	inches	12x12x11¼
Wall to Front of Bowl	inches	12
Height of Back	inches	8
Approximate Shipping Weight	pounds	35

Elevated bubbler head above rim of bowl eliminates possible contamination of water by back syphonage.

Furnished in white or colors.



No. K-5350-A

Clearbrook Vitreous China Drinking Fountain with rectangular bowl with overflow in rear to prevent back-syphonage. Supported on painted wall bracket.

Fittings: Angle stream non-squirting vandal-proof bubbler with self-closing valve adjustable for continuous flow, with metal 4-arm handle; automatic volume regulator; metal strainer with tail-piece.

Supply Pipe: Not furnished.

Trap: 1¼-inch P pattern with metal wall flange.

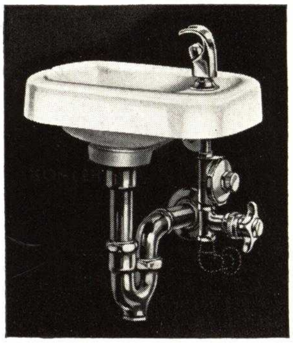
Exposed Brass: Chromium plated.

Size of Bowl	inches	11x7½
Wall to Front of Bowl	inches	12
Approximate Shipping Weight	pounds	21

Furnished in white and colors.

The opening from which the stream flows is above the overflow point of the receptacle.

Angle stream drinking fountains have the approved slanting stream, height of which is automatically controlled by regulator. This is also a sanitary safeguard since it assures the water falling clear of the fountain head.



No. K-5390-A

Edgebrook Enameled Cast Iron Drinking Fountain with octagonal enameled cast iron bowl with overflow to prevent back-syphonage. Supported on painted wall bracket.

Fittings: Angle stream non-squirting vandal-proof bubbler with self-closing valve adjustable for continuous flow, renewable unit, metal 4-arm handle, automatic pressure regulator; metal strainer with 1¼-inch tail piece.

Supply Pipe: Not furnished.

Trap: 1¼-inch P pattern with metal wall flange.

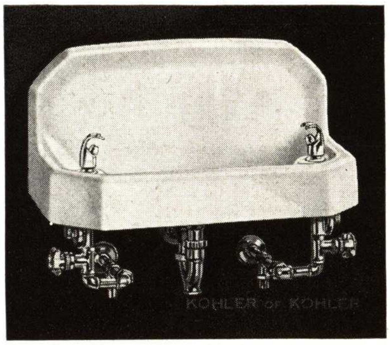
Exposed Brass: Chromium plated.

Size of Bowl	inches	12x8
Wall to Front of Bowl	inches	12
Approximate Shipping Weight	pounds	....

Furnished in regular white enamel only.

The opening from which the stream flows is above the overflow point of the receptacle.

Angle stream drinking fountains have the approved slanting stream, height of which is automatically controlled by regulator. This is also a sanitary safeguard since it assures the water falling clear of the fountain head.



No. K-5355-A, with Right and Left Fittings
No. K-5357-A, with Right-Hand Fittings Only

Meadowbrook Vitreous China Drinking Fountain with back. Supported on concealed wall hangers and metal brackets.

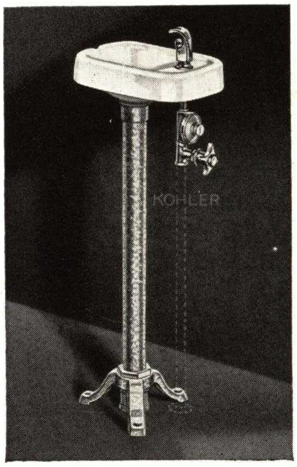
Fittings: Two angle stream non-squirting bubblers with self-closing controlling valves, renewable seats, metal 4-arm handles, automatic volume regulators, metal strainer with coupling nut, and 1¼-inch tail piece.

Supply Pipes: Offset, ⅜-inch I.P. size to wall, with loose key stops and wall escutcheons.

Exposed Metal: Chromium plated.

Nominal Size	inches	24x13
Wall to Front	inches	13
Length Overall	inches	24
Height of Back	inches	8
Approximate Shipping Weight	pounds	75

Can be furnished in white or colors.



No. K-5395-A

Cranbrook Pedestal Drinking Fountain with octagonal enameled cast iron bowl with overflow to prevent back-syphonage. Supported on galvanized iron combined pedestal and drain.

Fittings: Angle stream non-squirting vandal-proof bubbler with self-closing controlling valve adjustable for continuous flow, renewable unit, metal 4-arm handle, automatic volume regulator; metal strainer with coupling nut and 1¼-inch tail piece.

Supply Pipe: Not furnished.

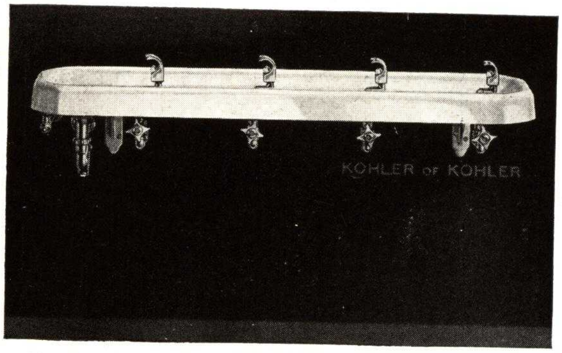
Trap: Not furnished.

Exposed Brass: Chromium plated.

Size of Bowl	inches	12x8	12x8
Height, Floor to Rim	inches	30	36
Approx. Ship. Wt.	pounds	....	....

Provision must be made for installation of trap below floor.

Furnished in regular white enamel only.



No. K-5400-A

Montello Enameled Cast Iron Drinking Fountain with roll rim and end outlet. Supported on painted brackets.

FITTINGS: Angle stream non-squirting bubblers, with volume regulators, self-closing controlling valves with metal 4-arm handles, and drain plug with metal grid.

SUPPLY PIPE: ⅜-inch I.P. size to wall, with loose key stop and metal escutcheon.

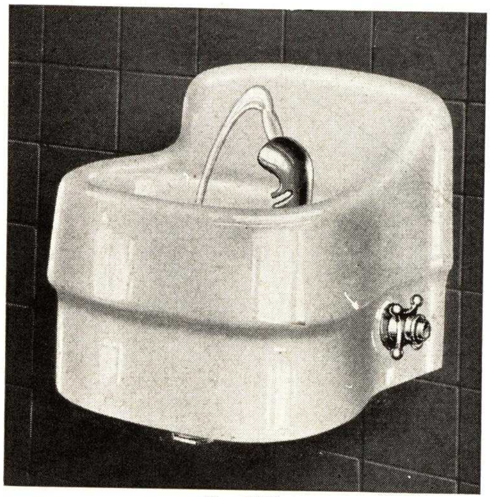
TRAP: 1¼ inch P pattern with metal wall flange.

EXPOSED METAL: Chromium plated.

Length	inches	30	42	54
Number of Bubblers	inches	2	3	4
Center to Center of Bubblers	inches	12	12	12
Width	inches	13¼	13¼	13¼
Depth Inside at Outlet	inches	2½	2½	2½
Approximate Shipping Weight	pounds	74	110	137

Enameled inside only.

Furnished in regular and acid-resisting white enamel only.



No. 2601

Heavy Vitreous China Wall Drinking Fountain with integral trap housing. Supported on concealed wall hangers.

Fittings, 2-stream, mound building projector and automatic stream control, brass strainer, and self-closing stop with cross handle.

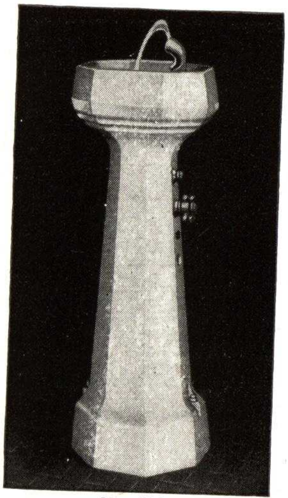
Supply, ⅜-inch I.P. Thread to wall with loose key stop.

Trap, brass, 1¼-inch P pattern with I.P.T. outlet.

Exposed metal chromium-plated.

Wall to Front	inches	11¼
Width Over All	inches	12
Depth of Receptor	inches	3¼
Approximate Shipping Weight	pounds	40

Can also be furnished less trap and with waste fitting for drain to wall.



No. 2615

Halsey Taylor Vitreous China Pedestal Drinking Fountain with pedestal and bowl integral.

FITTINGS: 2-stream mound building projector with self-closing controlling valve, metal 4-arm handle, automatic stream control, loose key volume regulator, drain connection, brass strainer, floor screws, and cap nuts.

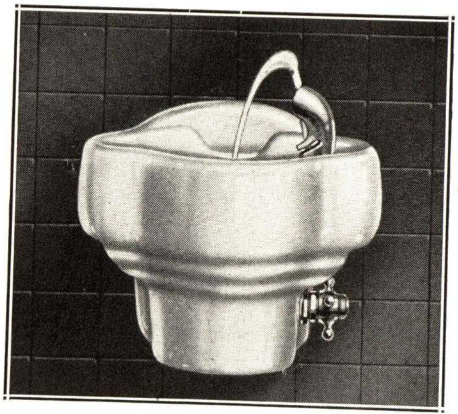
SUPPLY PIPE: ⅜-inch I.P. size to floor, loose key stop.

TRAP: Not furnished; must be installed below floor.

EXPOSED METAL: Chromium plated.

Bowl	inches	10x13	10x13
Depth Bowl	inches	3½	3½
Height, Floor to Rim	inches	30	36
Diameter Pedestal at Floor	inches	12½	12½
Approximate Shipping Weight	pounds	85	94

Furnished in white or colors.



No. 2605

Halsey Taylor Vitreous China Wall Drinking Fountain with integral trap housing. Supported on concealed wall hanger and brass wall bolts.

Fittings, 2-stream mound building projector, automatic stream control, self-closing stop with metal cross handle, loose key regulator with union connection for ⅜-inch I. P supply, and brass outlet strainer.

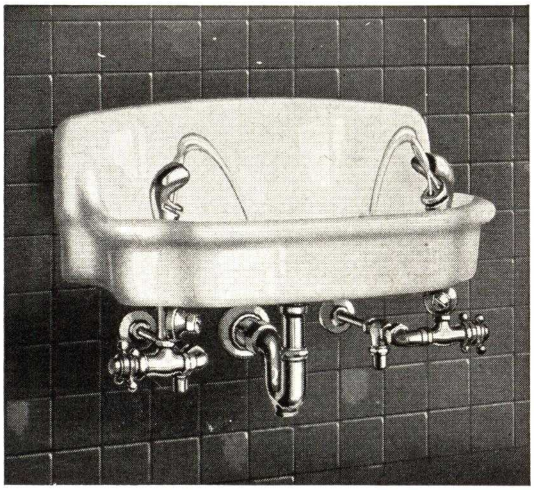
Trap, rough brass P pattern with 1¼-inch I. P. outlet

Exposed metal chromium plated.

Wall to Front	inches	13
Width over All	inches	13
Wall to Drinking Stream	inches	8
Approximate Shipping Weight	pounds	50

Also furnished with metal plate completely enclosing trap housing.

Can be furnished in various colors to match woodwork, marble or interior trim.



No. 2610

Halsey Taylor Vitreous China Wall Drinking Fountain with integral back. Supported on concealed wall hangers.

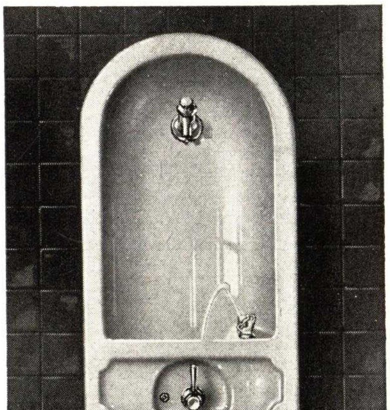
Fittings, two 2-stream mound building projector, automatic stream control, self-closing stops with 4-ball handles, loose key volume regulators and ⅜-inch iron pipe supply, and brass outlet strainer.

Trap, 1¼-inch P pattern.

Exposed metal chromium plated.

Wall to Front	inches	13
Length Over All	inches	24
Wall to Drinking Stream	inches	8
Depth of Receptor	inches	3½
Approximate Shipping Weight	pounds	90

Can be furnished in various colors to match woodwork, marble, or interior trim.



No. 2626

Halsey Taylor Vitreous China Recessed Wall Drinking Fountain with automatic stream control.

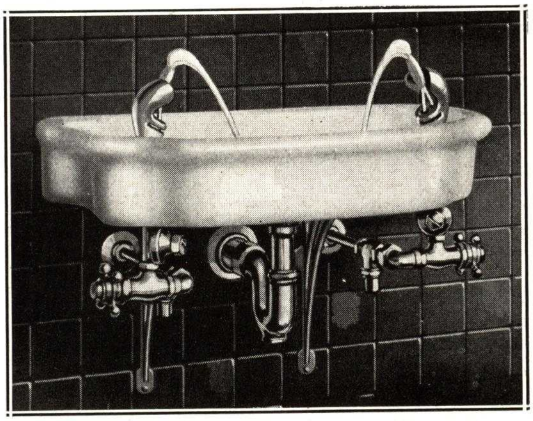
Fittings, 2-stream mound building projector, brass strainer, self-closing stop with metal lever handle, loose key regulator, and push button glass filling faucet through back.

Supply pipe, ⅜-inch iron pipe thread.

Trap, 1½-inch P pattern with cleanout and metal wall flange.

Exposed metal chromium plated.

Width	inches	16
Height	inches	29½
Receptor Opening	inches	12½x20¾
Depth of Receptor	inches	10
Approximate Shipping Weight	pounds	110

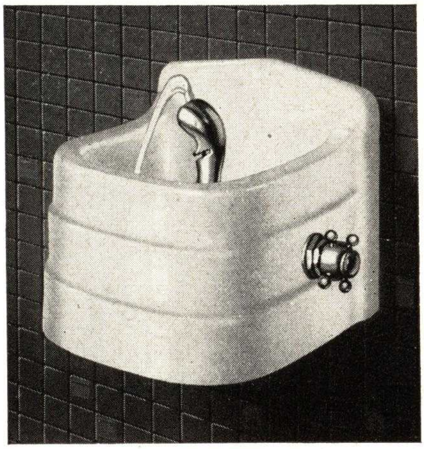


No. 2612

Halsey Taylor Heavy Vitreous China Wall Drinking Fountain supported on painted cast iron brackets.

Fittings, two-stream mound-building projector and Taylor automatic stream control, self-closing stops with 4-ball indexed handles, loose key volume regulators and ⅜-inch chromium-plated iron pipe supply, 1¼-inch chromium-plated brass trap and chromium-plated brass strainer.

Length Over All	inches	24
Wall to Front of Fountain	inches	13
Wall to Drinking Stream	inches	8
Depth of Receptor	inches	3½
Approximate Shipping Weight	pounds	56



No. 3901

Halsey Taylor Vitreous China Drinking Fountain with integral trap housing. Supported on concealed wall hanger.

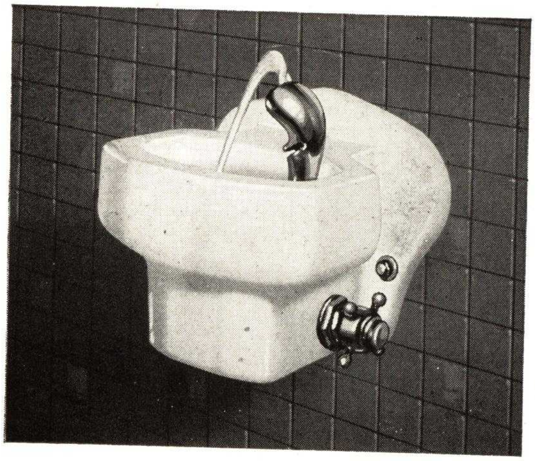
Fittings, 2-stream mound building projector, automatic stream control, self-closing stop with metal cross handle, loose key regulator with union connection for ⅜-inch I. P. supply and brass outlet strainer.

Trap, rough brass, P pattern with 1¼-inch I. P. outlet.

Exposed metal chromium plated.

Wall to Front	inches	11¼
Width Over All	inches	12
Depth of Receptor	inches	2½
Approximate Shipping Weight	pounds	40

Regularly furnished in white. Also available in various colors to match woodwork, marble, or interior trim.



No. 3903

Halsey Taylor Vitreous China Drinking Fountain with integral trap housing. Supported on concealed wall hanger and brass wall bolts.

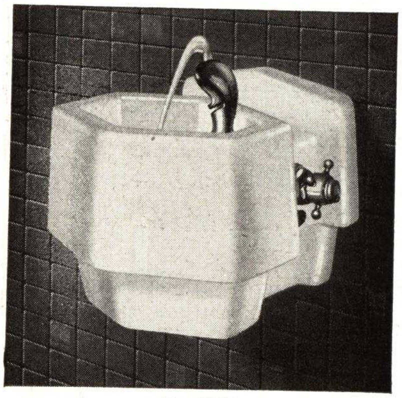
Fittings, 2-stream mound building projector, automatic stream control, self-closing stop with metal cross handle, loose key regulator with union connection for ⅜-inch I. P. supply, and brass outlet strainer.

Trap, rough brass, P pattern with 1¼-inch I. P. outlet.

Exposed metal chromium plated.

Wall to Front	inches	9⅝
Width Over All	inches	10¼
Depth of Receptor	inches	2¼
Approximate Shipping Weight	pounds	35

Regularly furnished in white. Also available in various colors to match woodwork, marble, or interior trim.



No. 3907

Halsey Taylor Enameled Cast Iron Drinking Fountain with integral trap housing. Supported on concealed wall hanger.

Fittings, 2-stream mound building projector, automatic stream control, self-closing stop with metal cross handle, loose key regulator with union connection for ⅜-inch I. P. supply, and brass outlet strainer.

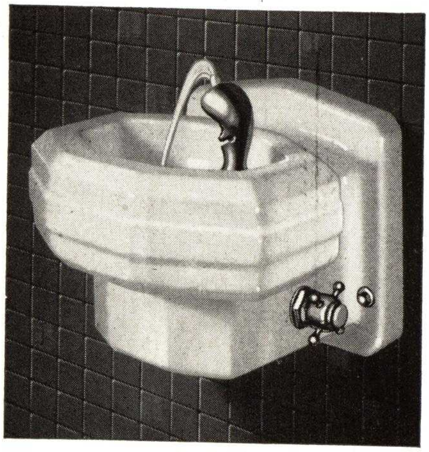
Trap, rough brass P pattern with 1¼-inch I. P. outlet.

Exposed metal chromium plated.

Wall to Front	inches	13¼
Width Over All	inches	12⅜
Depth of Receptor	inches	3
Approximate Shipping Weight	pounds	65

No. **3907-A**, same as above, except without integral trap housing. Approximate shipping weight, 50 pounds.

Furnished in regular white enamel only.



No. 3905

Halsey Taylor Vitreous China Drinking Fountain with integral trap housing. Supported on concealed wall hanger and brass wall bolts.

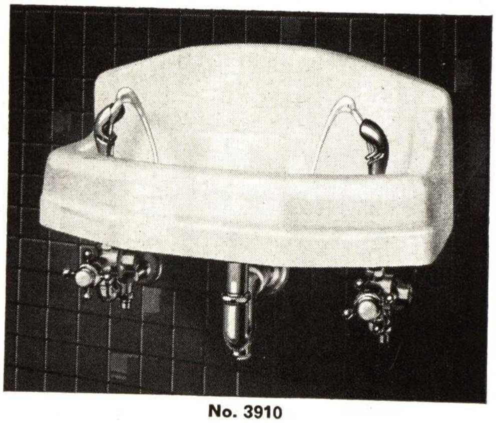
Fittings, 2-stream mound building projector, automatic stream control, self-closing stop with metal cross handle, loose key regulator with union connection for ⅜-inch I. P. supply, and brass outlet strainer.

Trap, rough brass, P pattern with 1¼-inch I. P. outlet.

Exposed metal chromium plated.

Wall to Front	inches	13
Width Over All	inches	13¼
Depth of Receptor	inches	3
Approximate Shipping Weight	pounds	41

Regularly furnished in white. Also available in various colors to match woodwork, marble, or interior trim.



No. 3910

Halsey Taylor Vitreous China Drinking Fountain with integral back. Supported on concealed wall hangers.

Fittings, two 2-stream mound building projectors, automatic stream control, self-closing stops with 4-ball handles, and brass outlet strainer.

Supply pipes, ⅜-inch I. P. size to wall with loose key stops and wall escutcheons.

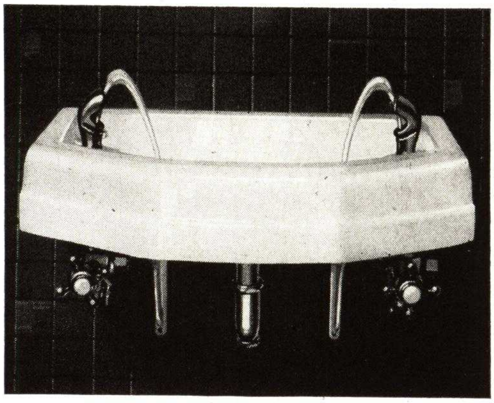
Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Wall to Front	inches	13
Length Over All	inches	24¼
Depth of Receptor	inches	4
Approximate Shipping Weight	pounds	75

Regularly furnished in white. Also available in various colors to match woodwork, marble, or interior trim.

No. **3911**, same as above except with self-closing push button glass filler through back.



No. 3912

Halsey Taylor Heavy Vitreous China Drinking Fountain without back. Supported on painted cast iron brackets.

Fittings, two 2-stream mound building projectors, automatic stream control, self-closing stops with 4-ball handles, and brass outlet strainer.

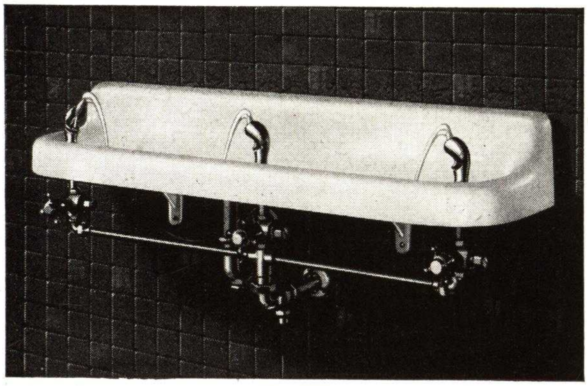
Supply pipes, ⅜-inch I.P. size to wall with loose key stops and wall escutcheons.

Trap, 1¼-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Wall to Front	inches	14
Length Over All	inches	24¼
Depth of Receptor	inches	4
Approximate Shipping Weight	pounds	70

Regularly furnished in white. Also available in various colors to match woodwork, marble, or interior trim.



No. 4003

Halsey Taylor Enameled Cast Iron Drinking Fountain with back, apron, and center outlet. Supported on concealed hangers and painted brackets.

Fittings, three 2-stream mound building projectors with automatic stream control, 3 self-closing stops with metal cross handle, and brass strainer outlet.

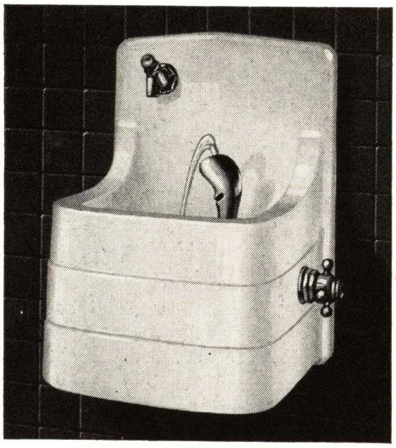
Supply pipe, ¾-inch I. P. size to wall, with loose key stop and metal escutcheon.

Trap, 1½-inch P pattern with metal wall flange.

Exposed metal chromium plated.

Nominal Size	inches	44½x17
Length Over All	inches	44½
Width Over All	inches	17
Back	inches	7
Apron	inches	3
Approximate Shipping Weight	pounds	160

Furnished in regular white enamel only.



No. 3923

Halsey Taylor Vitreous China Drinking Fountain with back and integral trap housing. Supported on concealed wall hangers and wall screws.

Fittings, 2-stream mound building projector, automatic stream control, self-closing stop with metal cross handle, loose key regulator with union connection for ⅜-inch I. P. supply, brass outlet strainer, and self-closing push button glass filler through back.

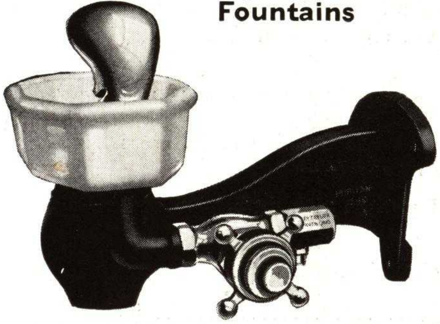
Trap, rough brass, P pattern with 1¼-inch I. P. outlet.

Exposed metal chromium plated.

Wall to Front	inches	13
Width Over All	inches	13
Depth of Receptor	inches	3½
Approximate Shipping Weight	pounds	60

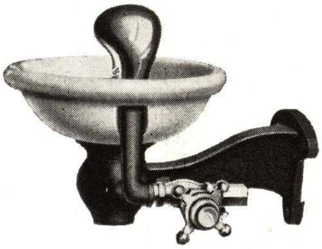
Regularly furnished in white. Also available in various colors to match woodwork, marble, or interior trim.

No. 2540 Halsey Taylor Wall Drinking Fountains



Heavy 6-inch vitreous china bowl mounted on bracket and support projecting 12 inches from wall. Self-closing stop. Loose key volume regulator. Has 2-stream mound building projector. Finished in baked gray enamel. Exposed fittings chromium plated. Supply is ⅜-inch I.P.; waste is 1-inch I.P. Weight, 15 pounds.

No. **2540**.......................................each .....

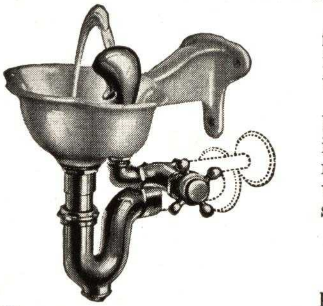


No. 2542 Halsey Taylor Wall Fountain with heavy vitreous china bowl mounted on cast iron bracket to wall, chromium-plated brass strainer, self-closing stop, loose key volume regulator, and 2-stream mound-building projector.

Bracket finished in baked gray enamel.

Approximate Shipping Weight..................pounds 20

No. 2566 Halsey Taylor Cantonment Type Wall Drinking Fountains



Cantonment type wall fountain with enameled cast iron receptor. Supported on wall screws.

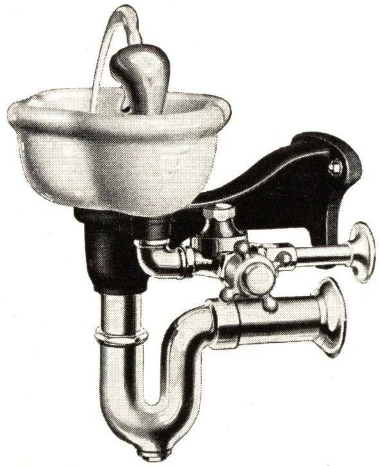
Fittings, 2-stream mound building projector with ⅜-inch self-closing stop, 4-ball metal handle, loose key volume regulator, and brass strainer.

Supply pipe not furnished.

Trap, 1¼-inch P pattern.

Exposed brass chromium plated.

Receptor	inches	6½x9½
Projection from Wall	inches	11½
Approximate Shipping Weight	pounds	15



No. 2600 Wall Fountain with heavy vitreous china receptor. Supported on cast iron baked gray enameled bracket to wall.

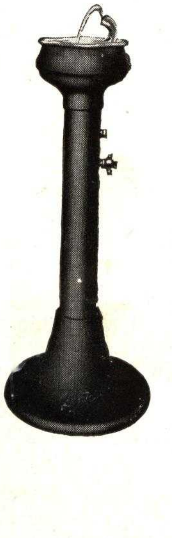
Fittings, 2-stream mound building projector, automatic stream control, loose key volume regulator, and brass outlet strainer. Self-closing stop with metal cross handle, ⅜ inch I.P.S. supply pipe to wall.

Trap, 1¼-inch P pattern with drain pipe and metal wall escutcheon.

Exposed brass chromium-plated.

Receptor	inches	**7½x10**
Depth Receptor	inches	3
Projection from Wall	inches	11½
Approximate Shipping Weight	pounds	30

No. 2520-68 Halsey Taylor Pedestal Drinking Fountains

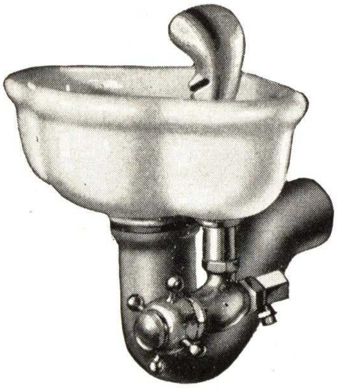


Enameled cast iron receptor set in cast iron protecting shield with two stream mound building projector and Taylor Automatic Stream Control, chromium-plated self-closing stop through 4-inch outside diameter steel tubing standard, loose key volume regulator concealed in base, concealed galvanized ⅜-in. supply and 1-in. waste pipe, heavy cast iron top and base.

By raising base cover, connections can be made without disturbing floor or concrete.

Receptor, 7½x10 inches. Diameter of adjustable cover, 16½ inches. Height of base cover, 10½ inches.

Height	inches	**36**	**39**	**42**
Ship. Wt.	pounds	87	90	95



No. 2589

Halsey Taylor Factory Type Wall Fountain with heavy vitreous china receptor. Supported on cast iron baked gray enameled combined trap and bracket to wall.

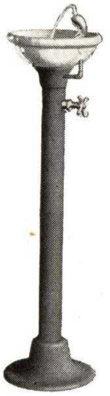
FITTINGS: 2-stream mound building projector, automatic stream control, loose key volume regulator, and brass outlet strainer. Self-closing stop with metal cross handle, ⅜-inch I.P.S.

TRAP: 1½-inch P pattern with drain pipe and metal wall escutcheon.

EXPOSED BRASS: Chromium plated.

Receptor	inches	7½x10
Depth Receptor	inches	3
Projection from Wall	inches	12
Approximate Shipping Weight	pounds	18

No. 2547 Halsey Taylor Pedestal Drinking Fountains

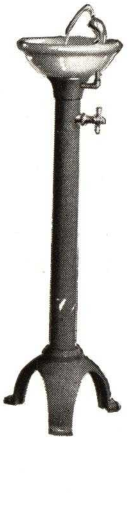


Heavy vitreous china receptor with self-closing stop, loose key volume regulator, 2-stream mound-building projector, 2⅜-inch O.D. steel tubing standard with cast iron closed base. Galvanized supply and waste pipes concealed within standard.

All exposed fittings chromium plated.

Base and standard finished in gray enamel.

Height	inches	**36**	**39**
Diameter of Receptor	inches	9½	9½
Diameter of Base	inches	9½	9½
Approx. Shipping Weight	pounds	45	52



No. 2548 Halsey Taylor Pedestal Drinking Fountain with heavy vitreous china receptor, self-closing valve, 3¾-inch guard ring, four-stream angle jet projector, ⅜-inch supply.

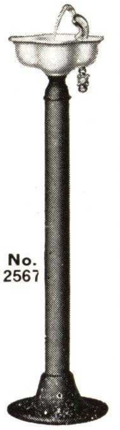
It has a loose key volume regulator. Regularly equipped with 2½-inch o. d. steel tubing standard with cast iron open base.

Galvanized supply and waste pipes are concealed within the standard.

Fittings chromium-plated.

Diameter of receptor and of the base is 9½ inches.

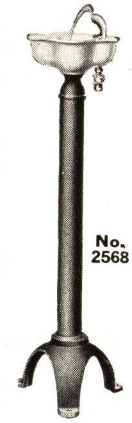
Height	inches	36	39
Approx. Ship. Wt.	pounds	45	52

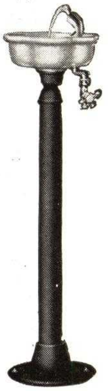

No. 2567

Nos. 2567 and 2568 Pedestal Drinking Fountain with heavy cast iron vitreous enameled bowl; 2½-inch O.D. steel tubing standard and cast iron closed base, chromium plated self-closing valve, loose key volume regulator, 2 stream mound building projector, ⅜-inch supply and 1-inch waste.

Height....inches	36	39
Receptor...inches	7½x9½	7½x9½
Base.......inches	9½	9½
Approx. Ship. Weight..pounds	50	50

No. **2568** is same as No. 2567 except that it has open base for connections above floor.

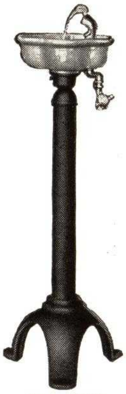

No. 2568

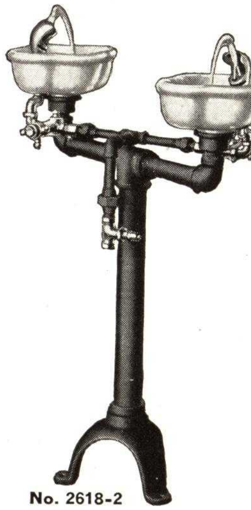

No. 2617

Halsey Taylor Pedestal Drinking Fountain with heavy vitreous china receptor, chromium-plated brass strainer, self-closing stop, loose key volume regulator, 2-stream mound building projector and automatic stream control.

Supply pipe, ⅜-inch I.P.T.
Drain, 1-inch I.P.T.
Standard, 2⅜-inch o.d.
Steel tubing, cast iron base.
All exposed brass chromium-plated.

Height.....in.	36	39
Receptor....in.	7½x10	7½x10
Depth Receptor..in.	3	3
Diam. Base.in.	9½	9½
Approximate Ship. Wt.lbs.	45	50


No. 2618


No. 2618-2

Halsey Taylor Pedestal Drinking Fountain with two vitreous china receptors. Supported on steel tubing standard and cast iron base.

Fittings, two, 2-stream mound building projectors with integral guards and Taylor automatic stream control, self-closing controlling valves, metal 4-arm handles, loose key volume regulators, 1½-inch drain connection with brass strainers.

Supply pipe, ½-inch I.P. size with loose key stop.

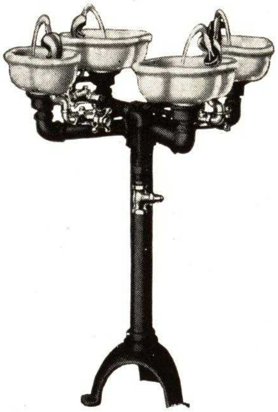
Trap, not furnished.

Exposed metal chromium plated.

Diameter Each Receptor.................inches	7½x10½
Height Over All.........................inches	36
Approximate Shipping Weight...........pounds	80

Provision must be made for installation of trap below floor.

Finished in gray.


No. 2618-4

Halsey Taylor Pedestal Drinking Fountain with four vitreous china receptors. Supported on steel tubing standard and cast iron base.

Fittings, four, 2-stream mound building projectors with integral guards and Taylor automatic stream control, self-closing controlling valves, metal 4-arm handles, loose key volume regulators, 1½-inch drain connection with brass strainers.

Supply pipe, ½-inch I.P. size with loose key stop.

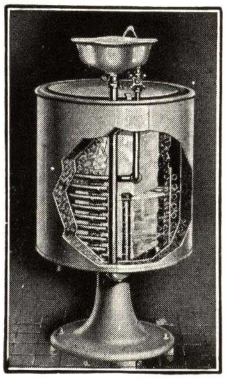
Trap, not furnished.

Exposed metal chromium plated.

Diameter Each Receptor.................inches	7½x10½
Height Over All.........................inches	36
Approximate Shipping Weight...........pounds	110

Provision must be made for installation of trap below floor.

Finished in gray.



No. 2570 Halsey Taylor Combination Cooler and Drinking Fountains

Bowl cast iron, enameled all over, with C. P. brass strainer; brass outlet and supply connection mounted on cooler with cover top, and base made of cast iron. Body of tank coil guard made from galvanized sheet iron. Insulation: Re-granulated cork in side walls and pressed cork board in bottom and cover of cooler. Cooling coil ½-inch O. D. No. 20 gauge seamless brass tubing, tinned. Supply pipe with self-closing stop and volume regulator; 2-stream mound building projector.

Receptor Inches	HT. TO TOP, IN. Ice Chamber	HT. TO TOP, IN. Receptor	Diam. Base, In.	Ship Wt. Lbs.	Price Each
7½x10	32	40	14	165	......

Halsey Taylor Plain Water Coolers

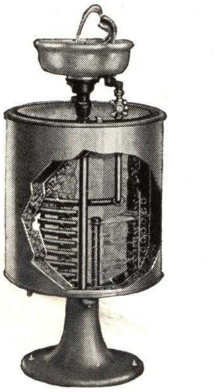
This cooler tank can be used in connection with fountains already installed or where it is desired to conceal cooler.

Also for installation in basement to supply fountain on floors above.

It is so constructed that the drinking water does not come in contact with either the ice or the melted ice water.

No.	**2571**	**2572**
Ice Capacity..........lbs.	80	120
Diam. Ice Chamber....in.	19	19
Height Ice Chamber...in.	19	29
Weight...............lbs.	132	170
Price.................each	......	.....

No. 2800 Halsey Taylor Combination Cooler and Drinking Fountain



Cooler is so constructed that the drinking water does not come in contact with either the ice or melted ice water, but is circulated through a brass coil which is tinned both inside and outside.

Bowl is vitreous china with chromium plate brass strainer; brass outlet and supply connection mounted on cooler with cover top, and base made of cast iron. Body of tank coil guard made from galvanized sheet iron. Insulation: regranulated cork in side walls and pressed cork board in bottom and cover of cooler.

Cooling coil made from ½-inch O.D No. 20 gage brass tubing tinned inside and outside. Supply and waste pipes concealed between walls of cooler. Supply pipe furnished with self closing stop and volume regulator.

Cover equipped with an air tight gasket. Furnished with two stream mound building projector and Taylor Automatic Stream Control.

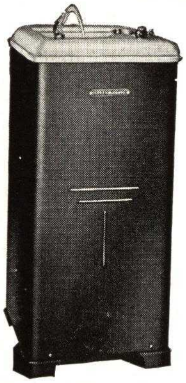
No.	**2800**
Each	......
Receptor ... inches	7½x10
Ice Chamber	
O.D ... inches	20
Height ... inches	20
Height to Top	
Ice Chamber ... inches	32
Receptor ... inches	40
Diameter Base ... inches	14
Shipping Weight ... pounds	148

Ice capacity 80 pounds, ice consumption approximately 1 pound per capita per day.

Halsey Taylor Electric Water Coolers

With Pre-Cooler and Air Cooled Condenser

110 Volts, 60 Cycles, Single Phase, A.C.



Cabinet is constructed of 17-gage steel, spot welded together and finished in metallic gray. Size of cabinet, 18x18x40½ inches high. Acid-resisting, cast iron, vitreous enameled head; Halsey Taylor Mound Building Projector. Automatic control installed inside of cabinet maintains constant stream height regardless of pressure. Self-closing cross handle valve is located in top of cabinet.

All connections through back of cabinet; ⅜-inch I.P. inlet, 1¼-inch I.P. drain outlet, ⅜-inch I.P. cold water outlet for extra fountain.

Unit contains a tinned Everdur storage tank, tested at 140 pounds pressure, 2 inches of approved insulation; and cooling coil of tinned copper tubing located inside of storage tank. Equipped with automatic expansion valve and thermostat which is in direct contact with outlet water.

Compressor, slow speed reciprocating type. Compressor assembly set in rubber. Refrigerant, Freon (F-12).

Capacitor type motors are regularly furnished; special motors furnished upon request.

No.	†**4**AF	**612**AF	**812**AF	**1020**AF
*Capacity ... gph.	7.8 to 2.0	22.3 to 7.4	28.3 to 7.6	39.0 to 12.0
Storage Tank Capacity ... gal.	1¼	1¼	3	3
Motor ... hp.	⅙	¼	¼	½
No. Cylinders in Compressor ...	1	1	2	2
Shipping Wt. lb ...	224	255	280	280

*Based on cooling to 50°F. with tap water and room temperature from 70° to 100°F. with ⅔ spill from bubbler.

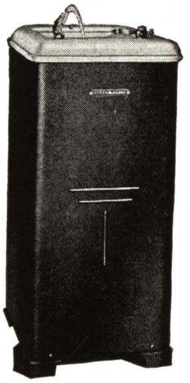
†Without pre-cooler.

Can be furnished with plain top for remote installation.

Halsey Taylor Electric Water Coolers

With Water Cooled Condenser

110 Volts, 60 Cycles, Single Phase, A.C.



Cabinet is constructed of 17-gage steel, spot welded together and finished in metallic gray. The acid-resisting, cast iron, vitreous enameled head covers the entire top of the cooler; Halsey Taylor Mound Building Projector. The automatic control installed inside of cabinet maintains constant stream height regardless of pressure. Self-closing cross handle valve is located in top of cabinet.

All connections through back of cabinet; ⅜-inch I.P. inlet, 1¼-inch I.P. drain outlet, ⅜-inch I.P. cold water outlet for extra fountain.

Unit contains a tinned Everdur storage tank, tested at 140 pounds pressure, 2 inches of approved insulation; and cooling coil of tinned copper tubing located inside of storage tank. With automatic expansion valve and a thermostat which is in direct contact with the outlet water.

Compressor, slow speed reciprocating type. Compressor assembly set in rubber. Refrigerant, Freon (F-12).

Capacitor motors regularly furnished; special motors furnished upon request.

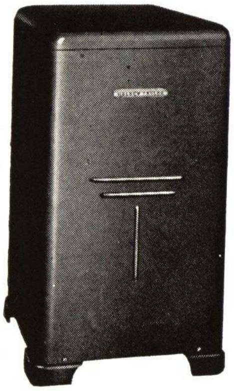
No.	**650**FW	**12**FW	†**16**FW	**23**FW
*Cap ... gph.	19.6 to 3.1	34.2 to 5.5	42.4 to 6.8	60.0 to 9.6
Storage Tank Cap. gal.	3	3	3	3
Motor ... hp.	¼	⅓	½	¾
No. Cyl. in Compressor.	1	2	2	2
Size Cabinet ... in.	18x18x40½	18x18x40½	22x22x40½	22x22x40½
Approx. Ship. Wt. ... lb.	257	260	355	410

*Based on cooling at a differential of 10° with cooled water at 60°F. to differential of 60° with cooled water at 40°F.

†Also available with 5, 10, or 15 gal. storage tank at added cost. Can be furnished with plain top for remote installation.

No. 012-FW-10 Halsey Taylor Electric Water Coolers

⅓ Hp., 115/230 Volts, 60 Cycles, Single Phase—450 RPM



Cabinet is constructed of steel, spot welded together and finished in metallic gray. Size of cabinet, 22x22x40½ inches high. Plain top.

Capacity, 10 gallons per hour based on 90°F. inlet temperature and 50°F. outlet temperature with 100°F. air temperature.

All connections through back of cabinet; ⅜-inch I.P. inlet. 1¼-inch I.P. drain outlet; ⅜-inch I.P. cold water outlet for extra fountain. Furnished without trap.

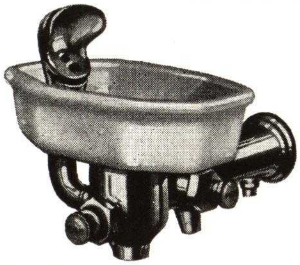
Unit contains a 10-gallon storage tank, tested at 140 pounds pressure, 2 inches of approved insulation; and cooling coil of tinned copper tubing located inside of storage tank. Equipped with automatic expansion valve and a thermostat in direct contact with the outlet water.

Compressor, slow speed twin cylinder reciprocating type. Compressor assembly set in rubber to reduce vibration.

Refrigerant, freon.

Prices furnished upon request.

No. 2002 Halsey Taylor Combination Glass Filler and Bubbling Fountains



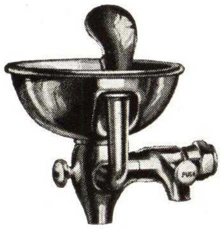
Enameled cast iron bowl with 2-stream mound building projector. Push button valves on fountain and glass filler.

Exposed metal chromium plated.

Size Receptor	inches	7x5
Wall to Front	inches	8½
Supply and Drain, Female, I.P.S.	inches	⅜
Approximate Shipping Weight	pounds	12

Receptor is provided with slot to prevent waste water from rising over projector in case of drain stoppage.

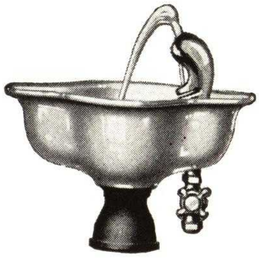
No. 2505 Halsey Taylor Fountain Heads



Six-inch C. P. spun brass bowl, self-closing push button valve, volume regulator, single stream angle jet projector with hood guard, self-closing push button on side for glass filler; ⅜-inch supply, ⅜-inch outlet, I. P. threads.

N. P...each .... C.P.. each ....

No. 2575 Drinking Fountain Heads

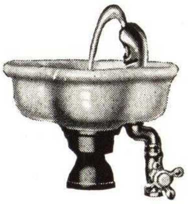


Fountain head with cast iron vitreous enameled receptor 6½x9½ inches, self-closing stop, volume regulator, and 2-stream mound building projector with integral guard. Inlet, ⅜-inch inside I.P. thread.

Exposed brass chromium plated.

No. **2575**......................................each .....

No. 2586 Fountain Heads

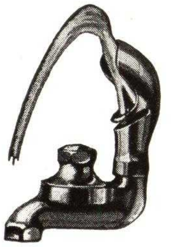


Vitreous china 7½x10½-inch receptor; brass strainer; self-closing stop has regulator, union connection. 2-stream mound building projector and automatic stream control. Exposed fittings chromium plated. Supply is ⅜-inch; waste is 1¼ or 1½-inch. Weight, 14 pounds.

No. **2586**..................each .....

No. 593A Halsey Taylor Drinking Fountain Heads

Automatic Control



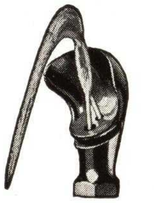
Chromium-plated brass with 2-stream mound building projector, integral shield, Taylor automatic stream control, and loose key volume regulator.

Supply, ⅜-inch female thread. Length 3½ inches over all.

Designed to replace present unsanitary bubblers or drinking fountains already installed.

No. **593A**..each ....

No. 2298 Drinking Fountain Heads

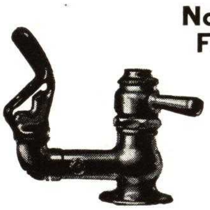


Chromium plated cast brass 2-stream mound building projector with integral guard. Inlet, ⅜-inch inside I.P. thread.

Designed to replace present unsanitary bubblers or drinking fountains already installed.

No. **2298**.........................each .....

No. 2507 Drinking Fountain Heads

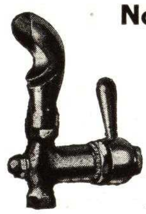


Chromium plated brass with 2-stream mound building projector; self-closing lever handle stop with lavatory tail-piece; volume regulator; supply ¼-inch I.P.

Shipping weight 3 pounds.

No. **2507**................ each .....

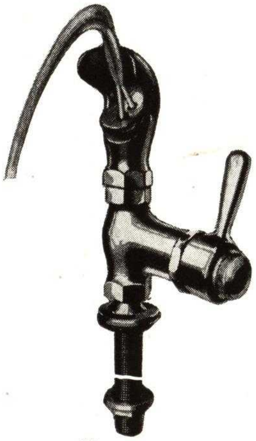
No. 2509 Drinking Fountain Heads



Chromium plated cast brass 2-stream mound building projector with integral guard, self-closing stop with lever handle and volume regulator. Inlet ⅜-inch outside I.P. thread.

No. **2509** ....each ....

No. 2742 Drinking Fountain Heads

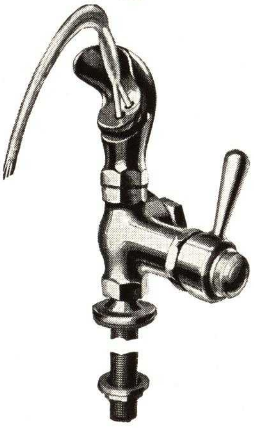


Chromium plated brass with 2-stream mound building projector volume regulator, and self-closing lever handle stop; lavatory tail-piece; hood guard; supply ½-inch iron pipe size.

Shipping weight, 4 pounds.

No. **2742**...........each ....

No. 2743 Drinking Fountain Heads

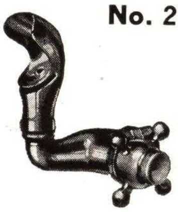


Chromium plated brass with 2-stream mound building projector and Taylor automatic stream control; automatic control self-closing lever handle stop; lavatory tail-piece; hood guard; supply ½-inch iron pipe.

Shipping weight 4 pounds.

No. **2743**..........each .....

No. 2744 Drinking Fountain Heads



Chromium plated cast brass 2-stream mound building projector with integral guard, self-closing stop and volume regulator. Inlet, ½-inch outside I.P. thread.

No. **2744**.................each .....

No. 1196 Halsey Taylor Automatic Stream Regulators

Heavy brass throughout. This regulator is balance valve diaphragm type and maintains a uniform height of drinking stream under varying water pressures without waste of water. Connection threaded inside I.P.

I. P. Size........................inches	¼	⅜
No. **1196**, Rough Brass................each	.....	.....
No. **1196**, Chromium Plated............each	.....	.....

No. 589 Angle Stream Nozzles

Chromium-plated angle stream nozzle with ⅜-inch inside iron pipe thread.

No. **589**........................each .....

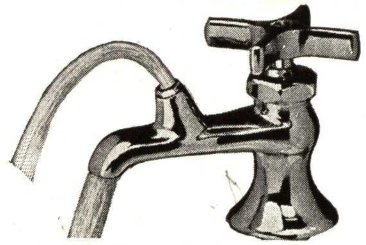
No. 658 Angle Stream Nozzles

Chromium-plated angle stream nozzle with volume control adjustment at front.

Female thread for ⅜-inch pipe.

No. **658**...........................each .....

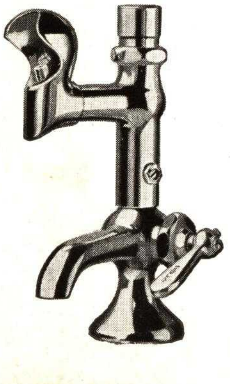
No. 586 Drinkmor Combination Bubbler and Lavatory Faucets



Chromium-plated combination bubbler and lavatory faucet with raised spout, metal cross handle, integral bubbler with hexagon adjusting nut, coupling nut, and ¼-inch I.P.T. tail-piece.

No. **586**, Quaturn (Compression)...............each .....
No. **586**, Klo-Self (Self-Closing)...............each .....

No. 722 Chicago Combination Bubbler and Lavatory Faucets



Consists of Quaturn lavatory faucet with metal lever handle and Angle-Stream drinking nozzle with push-button control. Has volume regulating screw on nozzle supply.

Chromium plated finish.

With shank for lavatory.

Size I.P. tail-piece, ¼ inch. Also without tail-piece to slip $\frac{7}{16}$ or ½-inch O.D. tubing when so specified.

No. **722**...............each .....

Klo-Self (self-closing) lavatory faucet furnished at extra cost when so specified.

No. 748 Chicago Push-Button Angle Stop Bubblers

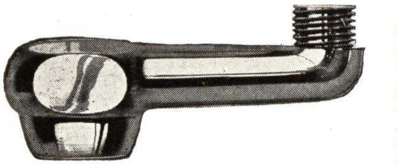
A chromium-plated bubbler with Angle-Stream nozzle with drain lip. Has integral volume control.

With 2¼-inch flange and shank for lavatory. Diameter of shank, $\frac{13}{16}$ inch.

Size of male I.P. tail-piece, ¼ inch. Height above slab, 5 inches.

No. **748**..............each ....

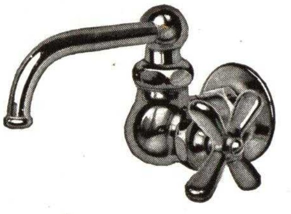
No. 348 Offset Supply Arms



Chromium plated offset supply arm for converting center bubbler to slant stream bubbler fountain. Size, ⅜-in., female inlet, male outlet. Center to center, 2½ in.

Ice Water Faucets

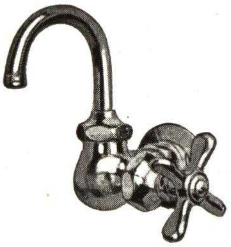
No. 170



Brass self-closing ice water faucet with swinging spout, regulating screw and four-arm handle, female connection for ½-inch iron pipe.

Chromium-Plated
...............each .....

No. 553 Ice Water Faucets

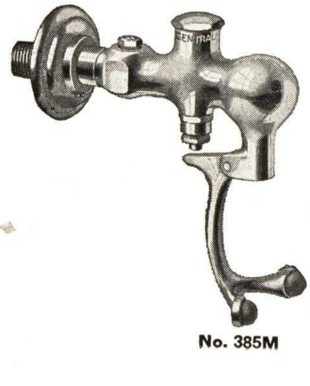


Brass self-closing ice water faucet with rigid gooseneck spout, regulating screw and 4-arm handle, female connection for ½-inch iron pipe.

No. **553**, Chromium-Plated...................each ....

Paragon Glass Fillers

This is a chromium-plated cast brass glass filler for city pressure. Has combined volume control and shut off.



No. 385M

All working parts are easily accessible by removing cap from body.

No. 385M, with Regulator and Adjustable Flange; ⅜-Inch Male Inlet, Center of Spout to Back of Flange 5 In. Max., 4 In. Min.......each .....

No. 385L, Same as 385M except less Flange and Nipple; ⅜-Inch Male Inlet, Center of Spout to End of Thread, 4 Inches.........each .....

No. 313 Speedway Glass Fillers

This glass filler is very speedy. Fills 1200 glasses an hour.

It is easy to operate, delivers a full stream at any desired rate of flow, closes gently without pounding, and can be operated from any angle.

Furnished also with single or double draft arm, and for draft arm already installed.

Finished in lustrous, lasting chromium plate.

No. **313**......................................each .....

No. 709 Speedway Glass Filler Faucets

Operates by means of an oscillating stem with rubber-edged disc.

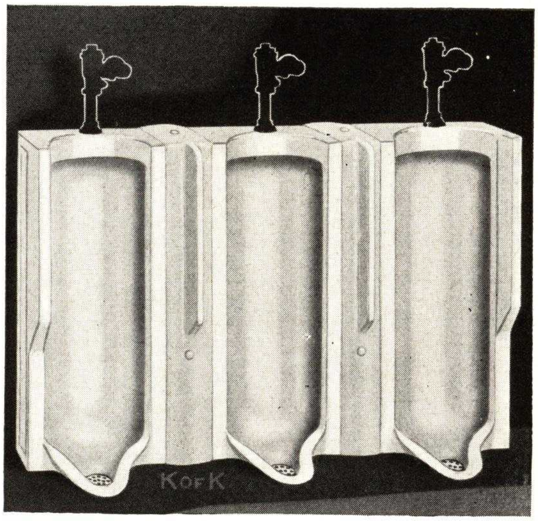
Delivers a full stream at any desired rate of flow. Volume regulator in shank. Closes without pounding.

Bottom of flange, to top of faucet, 9⅜ inches; to spout outlet, 6⅜ inches.

With ½-inch female shank.

Chromium plated.

No. **709**...........each .....



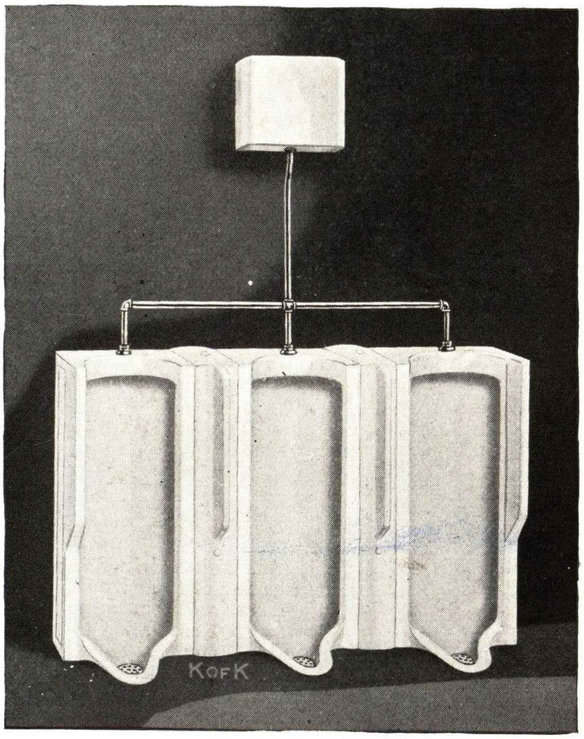
No. K-4901

Battery of Brandon Vitreous China Urinal Stalls with flushing rim and flow control. End stalls have one integral shield, inside stalls have seam covers.

Fittings: Flush valves with vacuum breakers, side inlets, ¾-inch ground joint union angle stops. ¾-inch straight flush connections, wall and spud flanges, and brass universal strainers with outlet connection for 2-inch lead or iron pipe.

*Width of Each Stall	inches	18
Height of Each Stall	inches	42
Height from Floor to Top of Stall	inches	38
Wall to Front of Lip	inches	16
Approx. Shipping Weight, less Fittings	pounds	463

*The overall widths vary, dependent on distance set apart whether to accommodate 2, 3, 4 or 6-inch seam covers.



No. K-4900

Battery of Brandon Vitreous China Urinal Stalls with seam covers and extended shields on ends of outside stalls, flushing rims, flow controls, top spuds for ¾-inch O.D. tubing slip joints, and brass universal strainers with china grates and outlet connection for 2-inch iron or lead pipe.

Tank: Vitreous china, 3-gallon capacity, with top supply float valve, automatic flush fittings, and 1-inch O.D. flush pipe assembly.

Exposed Metal: Chromium plated.

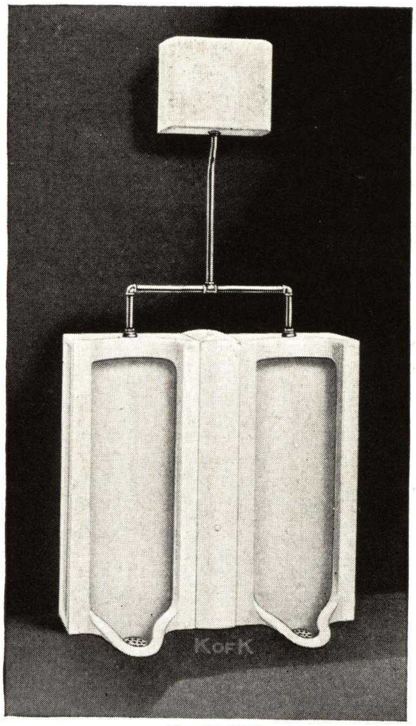
Width of Each Stall	inches	18
Height of Each Stall	inches	42
Height from Floor to Top of Stall	inches	38
Wall to Front of Lip	inches	16
Approx. Ship. Weight, Including Seam Covers	pounds	463
Approximate Shipping Weight, Tank and Fittings	pounds	61

The overall width varies, and is dependent on the distance set apart whether to accommodate 2, 3, 4, or 6-inch seam covers.

Specify if stalls are to set 20, 21, 22, or 24 inches center to center.

Can be furnished with rear inlet spuds for concealed tank installation when specified.

Furnished in white or colors.



No. K-4902

Battery of Branham Vitreous China Urinal Stalls with seam cover, straight fronts, flushing rims, flow controls, top spuds for ¾-inch O.D. tubing slip joints, and brass universal strainers with china grates and with outlet connection for 2-inch iron or lead pipe.

TANK: Vitreous china, 3-gallon capacity, with top supply float valve, automatic flush fittings, and ¾-inch O.D. flush pipe assembly.

EXPOSED METAL: Chromium plated.

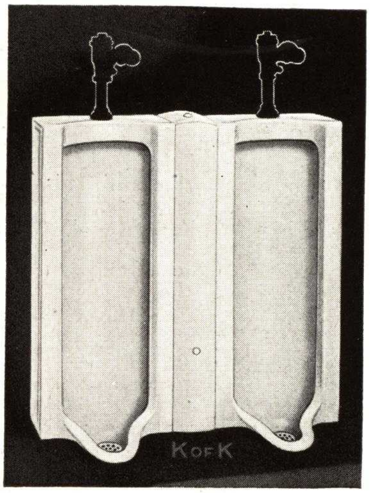
Width of Each Stall	inches	18
Height of Each Stall	inches	42
Height from Floor to Top of Stall	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Including Seam Covers	pounds	274
Approximate Shipping Weight, Tank and Fittings	pounds	53

The overall width varies, and is dependent on the distance set apart whether to accommodate 2, 3, 4, or 6-inch seam covers.

Specify if stalls are to set 20, 21, 22 or 24 inches center to center.

Can be furnished with rear inlet spuds for concealed tank installation when specified.

Furnished in white or colors.



No. K-4903, Two Stalls No. K-4905, Three Stalls

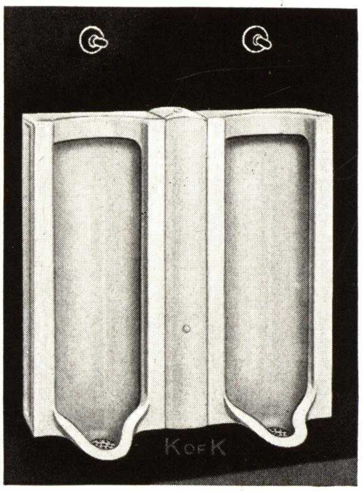
Battery of Branham Vitreous China Urinal Stalls with seam cover, straight front, flushing rim, and flow control.

FITTINGS: Flush valves with vacuum breakers, side inlets, ¾-inch ground joint union angle stops, ¾-inch straight flush connections, wall and spud flanges, and brass universal strainers with outlet connection for 2-inch lead or iron pipe.

*Width of Each Stall	inches	18
Height of Each Stall	inches	42
Height from Floor to Top of Each Stall	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall	pounds	109

*The overall widths vary, dependent on distance set apart whether to accommodate 2, 3, 4 or 6-inch seam covers.

Furnished in white or colors.



No. K-4906

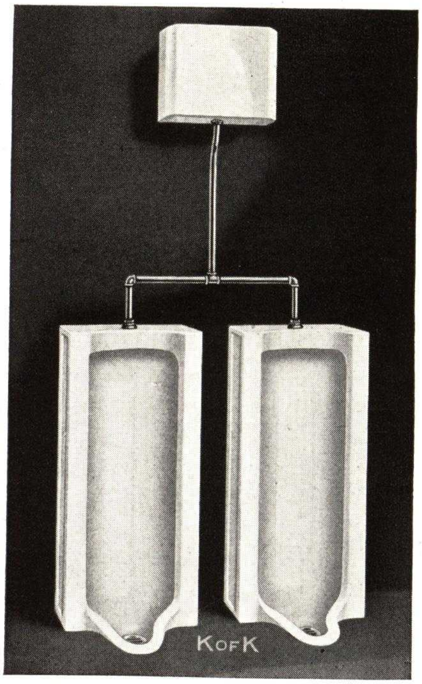
Battery of Branham Vitreous China Urinal Stalls with seam cover, straight front, flushing rim, and flow control.

FITTINGS: Concealed flush valves with side inlet, ¾-inch ground joint union angle stop, metal oscillating handle, ¾-inch elbow flush connection, and brass universal strainers with outlet connection for 2-inch lead or iron pipe.

EXPOSED METAL: Chromium plated.

*Width of Each Stall	inches	18
Height of Each Stall	inches	42
Height from Floor to Top of Stall	inches	38
Wall to Front of Lip	inches	16
Approx. Shipping Weight, less Fittings	pounds	274

*The overall widths vary, dependent on distance set apart whether to accommodate 2, 3, 4, or 6-inch seam covers.



No. K-4907, Battery of Two Urinals
No. K-4909, Single Urinal

Battery of Branham Vitreous China Urinal Stalls with straight fronts, integral flushing rims, flow controls, top spuds for ¾-inch O.D. tubing slip joints, and universal strainers with outlet connection for 2-inch iron or lead pipe.

Tank, vitreous china, 3-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

Exposed metal chromium plated.

Width Each Stall	inches	18
Height of Stall	inches	42
Height from Floor	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall	pounds	109
Approximate Shipping Weight, Tank and Fittings	pounds	46

The overall width varies and is dependent on the distance the stalls are set apart.

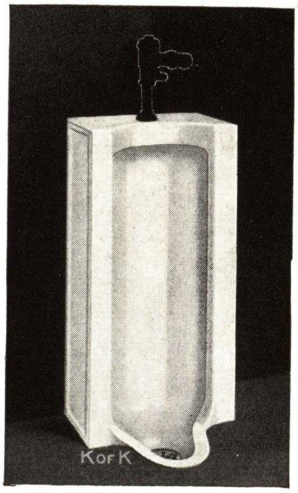
A 3-gallon tank is required for a single stall or a battery of 2 or 3 stalls. For a battery of 4 or 5 stalls a 6-gallon tank should be used.

Flush tank with pull chain fittings can be furnished at added cost.

Furnished in white or colors.

MANUFACTURERS' CATALOGS

We shall be glad to send Manufacturers' Catalogs and Other Available Publications and Data on request.



No. K-4910, Single Urinal
No. K-4908, Battery of Two Urinals

Branham Vitreous China Urinal Stall with straight front, integral flushing rim, and flow control.

Fittings flush valve with side inlet, ¾-inch ground joint union angle stop, metal oscillating handle, ¾-inch straight flush connection, wall and spud flanges, and brass universal strainer with outlet connection for 2-inch lead or iron pipe. Exposed metal chromium plated.

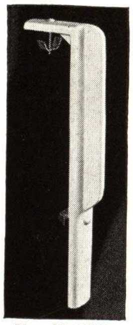
Width of Stall	inches	18
Height of Stall	inches	42
Height from Floor	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall	pounds	109

Can be furnished with rear inlet spud for concealed flush valve installation.

Furnished in white or colors.

Seam Covers with Spring Clamps

For Urinal Stalls

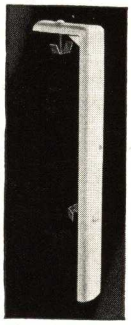


No. K-4930

No. K-4930—Extended wing seam cover with spring clamps.

No. K-4931 — Straight front seam cover with spring clamps.

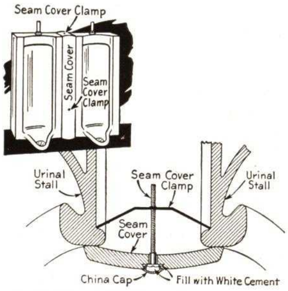
Spring clamps are furnished in two sizes for 21 and 24-inch centers.



No. K-4931

Width Seam Cover	inches	3	6
To Set Stalls, Center to Center	inches	21	24
No. K-**4930**, Approx. Ship. Wt.	pounds	65	94
No. K-**4931**, Approx. Ship. Wt.	pounds	50	85

Installation



Top view showing how seam covers for stall urinals are held in place by means of two spring clamps—one at top and one in front. The metal clamps are readily installed and eliminate the former method of cementing the seam covers to urinals. If necessary to replace one of the urinals, the seam cover can be removed very easily.

Complete instructions for installing spring clamps are on label attached to each seam cover.

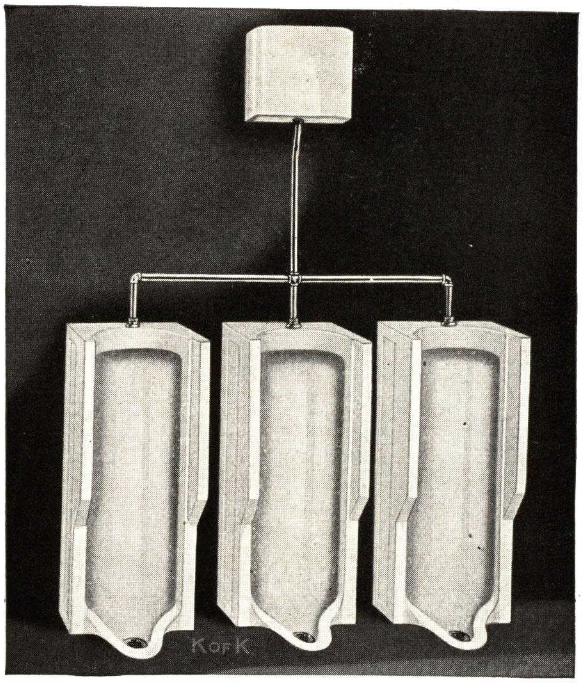
Hillan Battery of Vitreous China Urinal Stalls with integral extended wings, integral flushing rims flow controls, top spuds for ¾-inch O.D. tubing slip joints, and universal strainers for 2-inch iron or lead pipe.

Tank, vitreous china, 3-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

A 3-gallon tank is required for a single stall or a battery of 2 or 3 stalls. For a battery of 4 or 5 stalls a 6-gallon tank should be used.

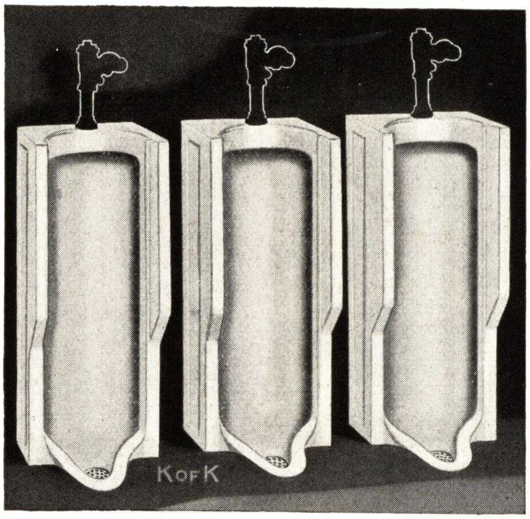
Flush tank with pull chain fittings can be furnished at added cost.

Furnished in white or colors.



No. K-4936, Battery of Three Urinals
No. K-4937, Battery of Two Urinals
No. K-4940, Single Urinal

Width Each Stall	inches	18½
Height of Stall	inches	42
Height from Floor	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall, less Fittings	pounds	120
Approximate Shipping Weight, Tank and Fittings	pounds	46



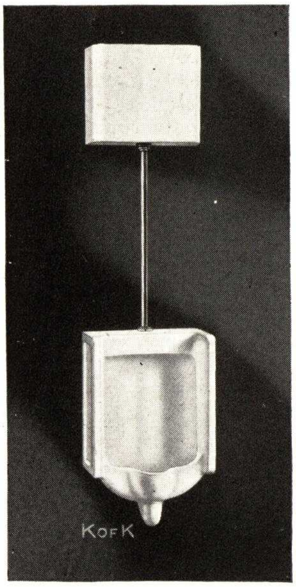
No. K-4938, Battery of Three Stalls
No. K-4941, Single Stall

Battery of Hillan Vitreous China Urinal Stalls with integral extended shields, flushing rim, flow control, and top spud for ¾-inch O.D. tubing slip joint.

Fittings: Flush valve with vacuum breaker, side inlet, ¾-inch ground joint union angle stop, metal oscillating handle, ¾-inch straight flush connection, wall and spud flanges, and brass universal strainer with outlet connection for 2-inch lead or iron pipe.

Width of Each Stall	inches	18
Height of Each Stall	inches	42
Height from Floor to Top of Each Stall	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall	pounds	120

Furnished in white or colors.



No. K-4960

Stanwell Vitreous China Blow-Out Urinal with jet, integral extended shields, flushing rim, top inlet spud for 1¼-inch O.D. tubing slip joint, integral trap, and outlet with 2-inch inside I.P. threads. Supported on concealed wall hangers and loose head lag screws.

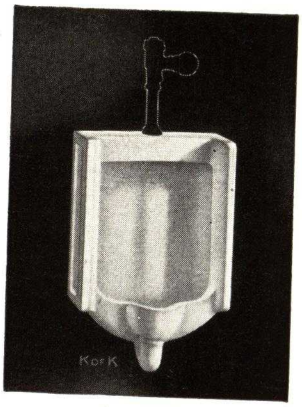
Tank: Vitreous china, 3-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

Exposed Metal: Chromium plated.

Width	inches	18
Wall to Front of Lip	inches	11¾
Height Overall, Urinal Only	inches	27¾
Approximate Shipping Weight	pounds	129

A single tank will not flush more than one Stanwell urinal.

Furnished in white or colors.



No. K-4961-A, Exposed Flush Valve

No. K-4963-A, Concealed Flush Valve

Stanwell Vitreous China Blowout Urinal with extended shields, flow control, integral flushing rim, strainer, integral trap, top inlet spud for 1¼-inch O.D. tubing slip joint, and outlet with 2-inch inside I.P. threads. Supported on concealed wall hangers and loose head lag screws.

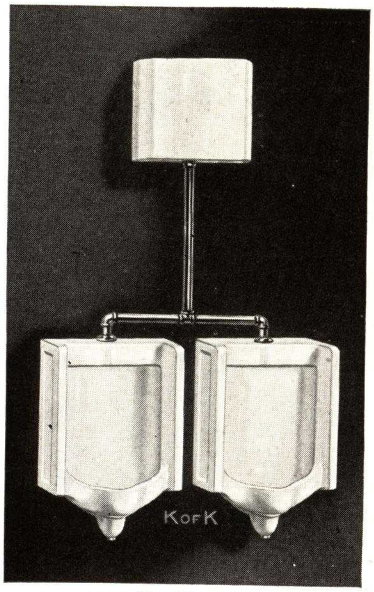
FITTINGS: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1¼-inch straight flush connection, wall and spud flanges.

EXPOSED METAL: Chromium plated.

Width	inches	18
Wall to Front of Lip	inches	11¾
Height Overall of Urinal	inches	27¾
Approximate Shipping Weight, less Valve	pounds	83

Flush valve with vacuum breaker can be furnished at added cost.

Furnished in white or colors.



No. K-4975

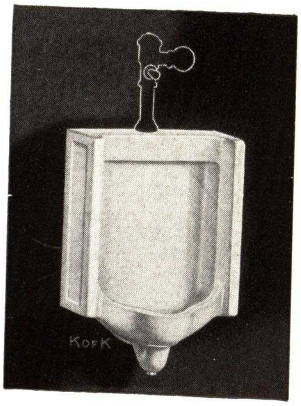
Battery of Bardon Vitreous China Urinals with integral extended shields, flushing rim, top spud for ¾-inch O.D. tubing slip joint, integral trap with cleanout, and outlet for 2-inch inside I.P. thread. Supported on concealed wall hangers and loose head lag screws.

TANK: Vitreous china, 3-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

EXPOSED METAL: Chromium plated.

Width of Each Urinal	inches	18
Wall to Front of Lip	inches	11¾
Height Overall, Urinal Only	inches	27¾
Approximate Shipping Weight	pounds	216

Furnished in white or colors.



No. K-4977-A

Bardon Vitreous China Washout Urinal with integral extended shields, flow control, spreader, strainer, trap with cleanout, top spud for ¾-inch O.D. tubing slip joint, and outlet with 2-inch inside I.P. thread. Supported on wall hangers and loose head lag screws.

FITTINGS: Flush valve with side inlet, ¾-inch ground joint union angle stop, metal oscillating handle, ¾-inch straight flush connection, and wall and spud flanges.

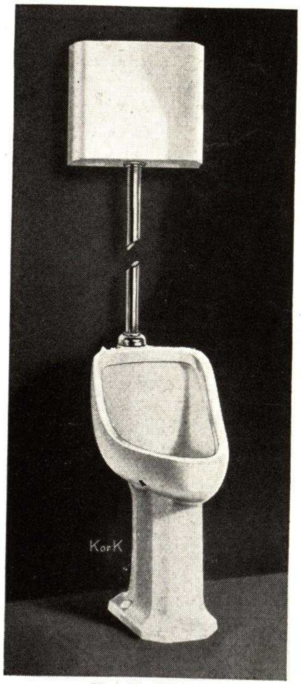
EXPOSED METAL: Chromium plated.

Width	inches	18
Wall to Front of Lip	inches	11¾
Height, Urinal Only	inches	27¾
Approximate Shipping Weight, less Valve	pounds	85

Flush valve with vacuum breaker can be furnished at added cost.

Can be furnished with back spud and concealed flush valve when specified.

Furnished in white or colors.



No. K-4990

Brampford Vitreous China Syphon Jet Pedestal Urinal with integral trap, flushing rim, and top inlet spud for 1¼-inch O.D. tubing slip joint.

TANK: Vitreous china, 3-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

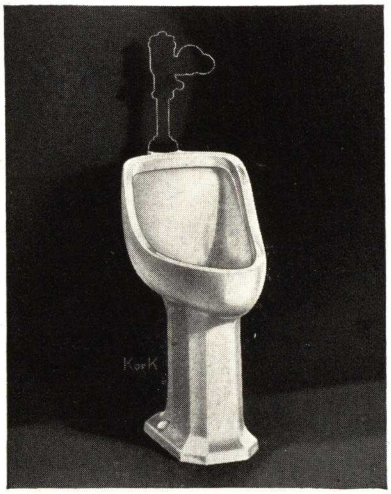
EXPOSED METAL: Chromium plated.

Width, Urinal Only	inches	14
Height, Urinal Only	inches	28
Wall to Front of Lip	inches	23¾
Floor to Top of Lip	inches	20
Approximate Shipping Wt.	pounds	112

A free standing fixture. Inexpensive to install.

Regular type water closet floor flanges should be used with Brampford urinals.

Furnished in white or colors.



No. K-4992

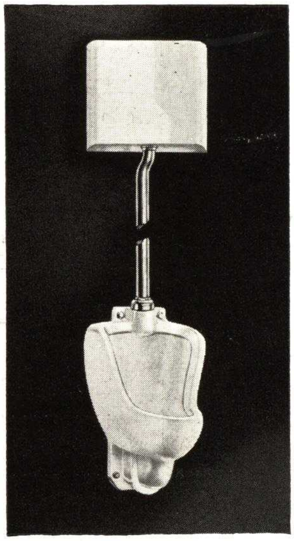
Brampford Vitreous China Syphon Jet Pedestal Urinal with integral trap, flushing rim, and top inlet spud for 1¼-inch O.D. tubing slip joint.

Fittings: Flush valve with side inlet, 1-inch ground joint union angle stop, metal oscillating handle, 1¼-inch straight flush connection, wall and spud flanges, closet screws, and china bolt caps.

Exposed Metal: Chromium plated.

Width, Urinal Only	inches	14
Height, Urinal Only	inches	28
Wall to Front of Lip	inches	23¾
Floor to Top of Lip	inches	20
Approximate Shipping Weight, Less Valve	pounds	69

Regular type water-closet floor flanges should be used with Brampford Urinals. Furnished in white or colors.



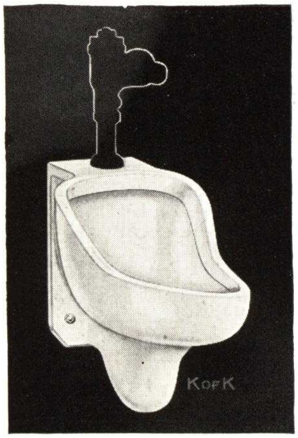
No. K-5010

Dexter Vitreous China Syphon Jet Urinal with integral flushing rim, syphon jet, strainer, trap, top inlet spud for 1¼-inch O.D. tubing slip joint, and outlet with 2-inch inside I.P.S. outlet connection. Supported on loose head lag screws.

Tank: Vitreous china, 3-gallon capacity, with top supply float valve, automatic flush fittings, and flush pipe assembly.

Width	inches	14
Wall to Front of Lip	inches	14
Height Overall, Urinal Only	inches	19
Approximate Shipping Weight	pounds	85

Furnished in white only.



No. 5001, Top Supply for Exposed Valve
No. 5002, Back Supply for Concealed Valve

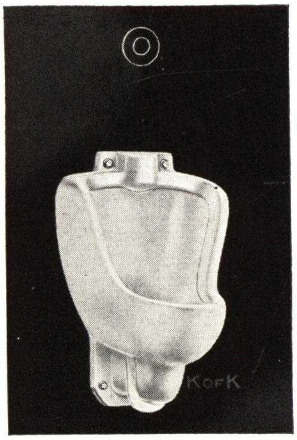
Derry Vitreous China Blow-Out Urinal with integral trap, flushing rim, inlet spud for 1½-inch O.D. tubing slip joint, and outlet with 2-inch I.P.S. outlet connection. Supported on wall hanger and bolts.

Fittings: Flush valve with vacuum breaker, side inlet, 1-inch ground joint union straight stop, metal oscillating handle, 1½-inch flush connection and wall flange.

Exposed Metal: Chromium plated.

Width	inches	14
Wall to Front of Lip	inches	21
Height Overall, Urinal Only	inches	17¾
Approximate Shipping Weight, less Valve	pounds	50

Outlet connection tapped 3-inch I.P.S. when specified. Furnished in white only.



No. K-5012, Back Supply for Concealed Valve
No. K-5013, Top Supply for Exposed Valve

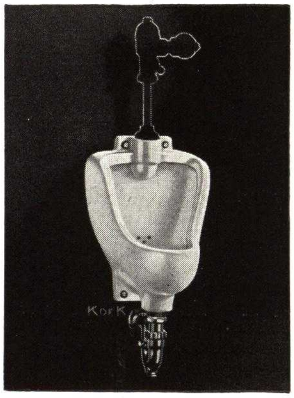
Dexter Vitreous China Syphon Jet Urinal with integral flushing rim, syphon jet, strainer, trap, inlet spud for ¾-inch O.D. tubing slip joint, and outlet with 2-inch inside I.P.S. outlet connection. Supported on loose head lag screws.

Fittings: Flush valve with vacuum breaker, side inlet, ¾-inch ground joint union straight stop, metal oscillating handle, ¾-inch flush connection and wall flange.

Exposed Metal: Chromium-plated.

Width	inches	14
Wall to Front of Lip	inches	14
Height Overall, Urinal Only	inches	19
Approximate Shipping Weight, less Valve	pounds	40

Furnished in white only.



No. K-5019

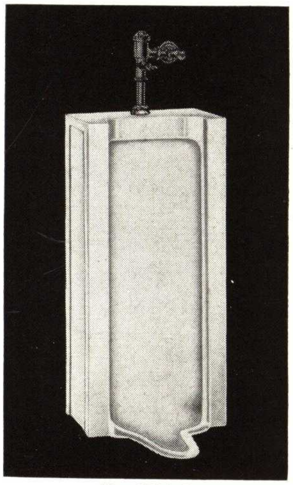
Darfield Vitreous China Flat Back Washout Urinal with integral flushing rim, strainer, top inlet spud for ¾-inch O.D. tubing slip joint, and 1½-inch outlet spud. Supported on concealed wall hangers and loose head lag screws.

Fittings: Flush valve with side inlet, ¾-inch ground joint union angle stop, metal oscillating handle, ¾-inch straight flush connection, wall and spud flanges.

Exposed Metal: Chromium plated.

Width	inches	13
Wall to Front	inches	14
Height Overall of Urinal	inches	17
Approximate Shipping Weight, less Valve	pounds	37

Furnished in white only.



No. 2300-A

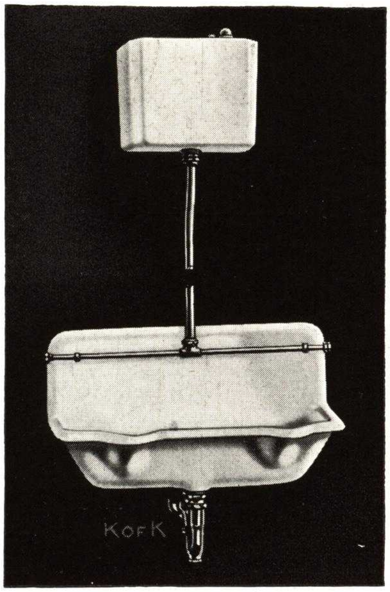
Casco Vitreous China Urinal Stall with straight front and integral flushing rim.

Fittings: Flush valve with side inlet, ¾-inch ground joint union angle stop, metal oscillating handle, ¾-inch straight flush connection, wall and spud flanges, and brass universal strainer with outlet connection for 2-inch lead or iron pipe.

Exposed Metal: Chromium plated.

Width of Stall	inches	18
Height of Stall	inches	42
Height From Floor	inches	38
Wall to Front of Lip	inches	16
Approximate Shipping Weight, Each Stall	pounds	157

Furnished in white only.



No. K-5050-A

Jarves Enameled Cast Iron Urinal with back and lipped roll rim. Supported on concealed wall hangers.

Tank: Enameled cast iron, with top supply float valve and automatic flush fittings.

Fittings: Flush pipe, perforated wash-down pipe, clamps, and beehive strainer.

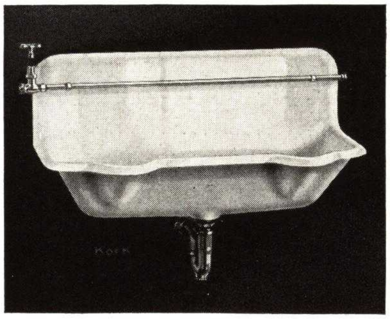
Trap: 1½-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Length	inches	48	60	72
Number of Lips		2	3	4
Lips, Center to Center	inches	32	22	18½
Approximate Shipping Weight, Urinal and Tank	pounds	212	237	257

Regularly furnished with urinal enameled inside and painted outside.

Furnished in regular or acid-resisting white enamel.



No. K-5052-A

Jarves Enameled Cast Iron Roll Rim Urinal with integral back and lips. Supported on concealed hangers.

Fittings: Perforated flush pipe with ½-inch loose key stop, and brass beehive strainer.

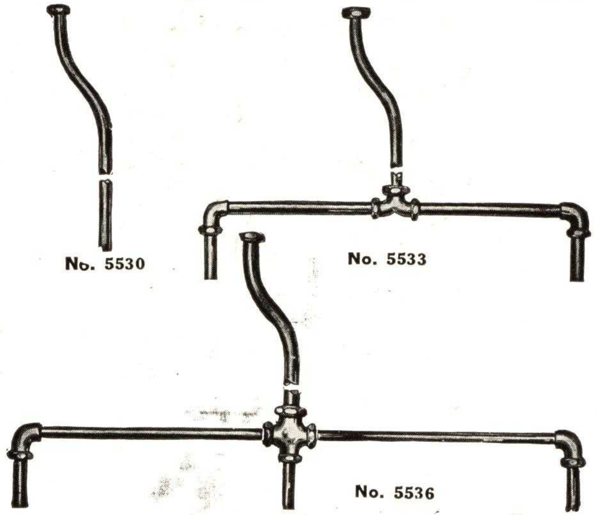
Trap: 1¼-inch P pattern with metal wall flange.

Exposed Metal: Chromium plated.

Length	inches	48	60	72
No. of Lips		2	3	4
Center to Center of Lips	inches	32	22	18½
Approx. Shipping Weight	pounds	161	177	223

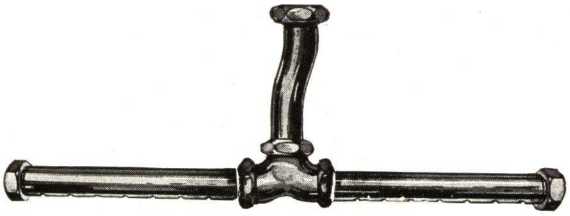
Regular white and acid-resisting white enamel.

Brass Flush Pipes for Automatic Urinal Tanks



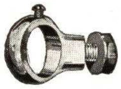
	Each	
	N. P.	Chromium
No. **5530**, 1-Part ¾″ O.D. for 1-Gal. Tank...	.....	.....
No. **5533**, 2-Part ¾″ O.D. for 2-Gal. Tank...	.....	.....
No. **5536**, 3-Part 1″ O.D. for 3-Gal. Tank....	.....	.....
No. **5539**, 4-Part 1¼″ O.D. for 5-Gal. Tank..	.....	.....

No. 5520 Perforated Brass Flush Pipe with Pipe to Tank



Length...........feet	2	3	4	5	6
Finished..........each	.....	.....	......	......	......
Nickel-Plated....each	.....	.....	......	......	......
Chromium-Plated.each	.....	.....	......	......	......

No. 5517 Supports for Urinal Flush Pipes



Brass straps for perforated wash down pipe on trough urinals.

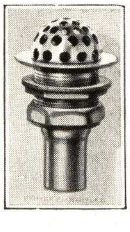
No. **5517**, Finished............................	each	....
No. **5517**, Nickel Plated.......................	each	....
No. **5517**, Chromium Plated..................	each	....

No. K-9174 Urinal Strainers

For Vitreous China Urinals

China strainer plate, removable face. Tapped 2 or 3-inch iron pipe thread.

No. K-**9174**..........each .....



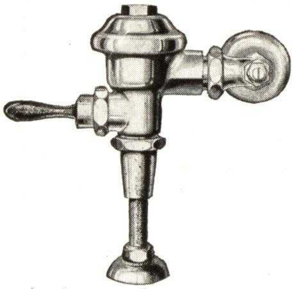
No. K-9160 Brass Beehive Urinal Strainers

For Enameled Cast Iron Urinals

Chromium-plated brass beehive strainer with 1½-inch O.D. tubing tail piece.

No. K-**9160**........................each ....

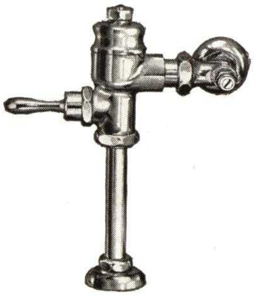
No. 185 Sloan Royal Urinal Flush Valves



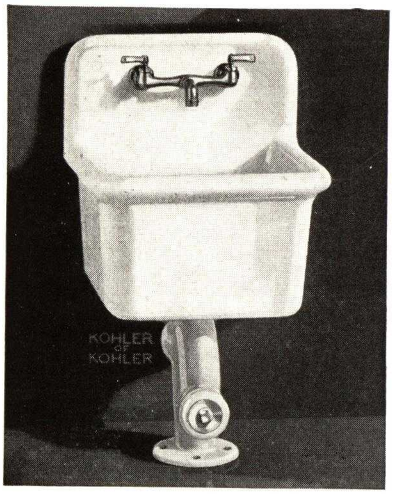
For washout urinals. With metal handle, ¾-inch loose key angle stop, flush connection and coupling for ¾-inch top spud, wall and spud flanges.

No. **185**, Chromium Plated.....................each ....

No. 185 Sloan Crown Urinal Flush Valves



Crown urinal flush valve for washout urinals. Chromium plated, with metal handle, ¾-inch loose key angle and flush connection, and coupling for ¾-inch top spud, wall and spud flanges.



No. K-5115-A

Sudbury Vitreous China Roll Rim Service Sink with back. Supported on adjustable trap standard.

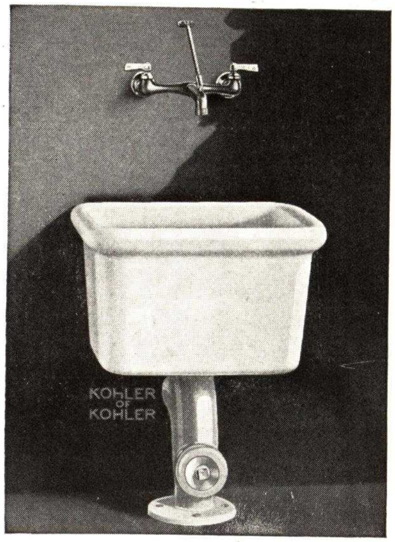
FITTINGS: All-metal compression combination supply fitting with renewable seats, lever handles, 2½-inch nozzle with hose connection, and drain plug with metal grid.

TRAP: Enameled inside adjustable standard with cleanout and outlet for 3-inch iron pipe.

EXPOSED METAL: Chromium plated.

Nominal Size.......................inches	20x18	22x20
Depth Inside.......................inches	12	12¾
Height of Back......................inches	8	10
Approx. Ship. Wt., with Trap, less Fittings..........................pounds	98	120

Furnished in white only.



No. K-5121-A

Secor Vitreous China Roll Rim Service Sink without back. Supported on adjustable trap standard.

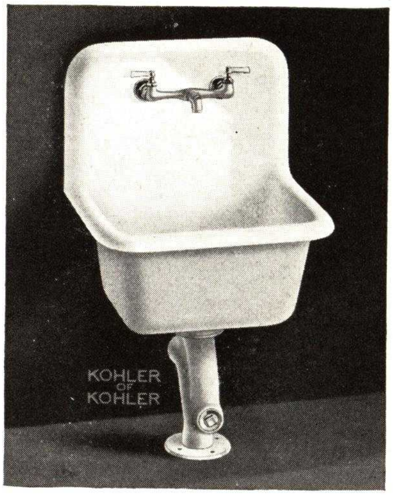
FITTINGS: All-metal compression combination supply fitting with renewable seats, lever handles, 6-inch nozzle with hose connection, bucket hook and wall brace, and drain plug with metal grid.

TRAP: Enameled inside adjustable standard with cleanout and outlet for 3-inch iron pipe.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	22x18
Depth Inside	inches	12
Approximate Shipping Weight, with trap, less Fittings	pounds	134

Furnished in white only.



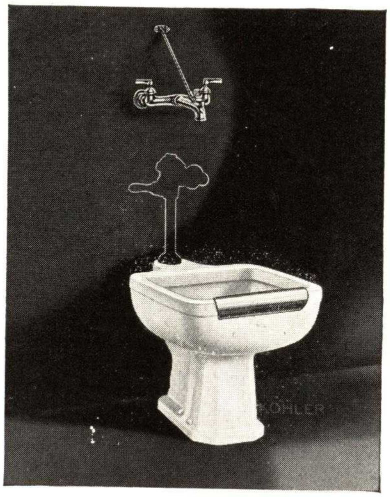
No. K-5200-A

Bannon Enameled Cast Iron Roll Rim Service Sink with back and roll rim. Painted outside. Supported on adjustable trap standard and concealed wall hanger.

Fittings, all-metal compression combination faucet with renewable seats, hose end spout with bucket hook, lever handles, ½-inch I.P. size union couplings with adjustable flanges, and drain plug with metal grid. Trap, enameled inside adjustable standard with cleanout and outlet for 3-inch iron pipe. Exposed metal chromium plated.

Nominal Size	inches	20x16	22x18	24x20
Depth of Sink	inches	12	12	12
Height of Back	inches	14	14	14
Floor to Rim	inches	26	26	26
Approx. Ship. Wt., less Ftgs.	pounds	97	104	120

Furnished in acid-resisting white enamel.



No. K-5160-A

Tyrrell Vitreous China Service Sink with syphon jet integral trap, flushing rim, and metal rim guard.

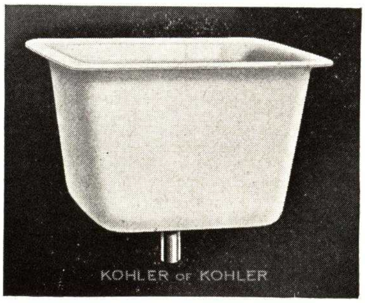
FITTINGS: All-metal flush valve with 1½-inch flush pipe, 1-inch loose key angle stop, over-rim supply spout with compression valves, lever handles, pail hook, wall brace, wall flanges, metal rim guard, floor bolts, screws and vitreous china bolt caps.

EXPOSED METAL: Chromium plated.

Nominal Size	inches	20x20
Height, Floor to Rim	inches	20
Wall to Front	inches	27½
Approximate Shipping Weight Complete	pounds	140

Flush valve available with vacuum breaker.

Furnished in white only.



No. K-5245-A

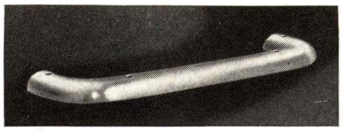
Balfron Enameled Cast Iron Flat Rim Service Sump with painted outside.

FITTINGS: 1½-inch strainer with metal grid and tail piece.

Nominal Size	inches	16x16	20x16	22x18
Depth of Sink	inches	10	10	12
Approx. Ship. Weight	pounds	45	55	65

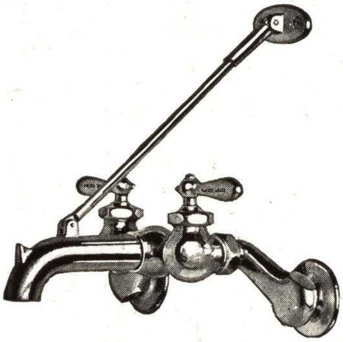
Furnished in acid-resisting white enamel.

No. K-8930 Service Sink Rim Guards
For Enameled Cast Iron Roll Rim Service Sinks



In three sizes for 20x16, 22x18, and 24x20-inch sinks.

No. 174 Chicago Quaturn Double Service Sink Faucets



For sinks with backs. With ½ inch IPS adjustable arms, adjustable wall brace, and pail hook on spout.

Also available for sinks without backs.

Chromium plated.

No. **174**......each .....

Either available, at extra cost, with longer arms for 10-inch or 12-inch centers; also with ¾-inch hose thread on outlet. With ¾-inch inlets at no extra cost on all arms.

No. K-8912 Knoxford Compression Service Sink Faucets

Rough chromium-plated compression service sink faucet with lever handles, renewable seats, 2½-inch spout with hose end and pail hook, and ½-inch union shanks, outside thread.

No. K-**8912**..................................each ....
For ½-inch Lock Shield in Shanks, Add.........each ....

Can be furnished with ½-inch inside thread.

Service Sink Cast Iron Trap Standards

For Enameled Cast Iron and Vitreous China Service Sinks

KOHLER of KOHLER

No. K-5235

Service sink cast iron trap standard, S pattern, with brass clean-out plug, strainer, and collar.

Acid-resisting white enamel inside, painted outside.

No. K-**5235**, for 3-Inch Lead Pipe........each ....

No. K-**5237**, for 3-Inch Soil Pipe..............each ....

No. K-5239 Service Sink Cast Iron Trap Standards

For Enameled Cast Iron and Vitreous China Service Sinks

KOHLER
KOHLER

Service sink cast iron trap standard, P pattern, with adjustable floor flange, brass clean-out plug, strainer, collar, and 3-inch I.P.S. tapped outlet.

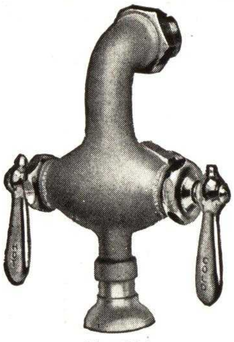
Also available with 2-inch I.P.S. tapped outlet.

Acid-resisting white enamel inside, painted outside.

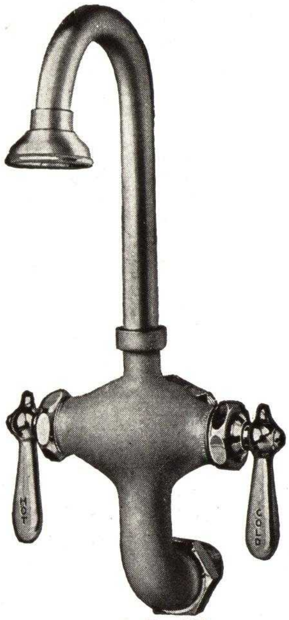
No. K-**5239**..........each .....

Chicago Quaturn Mixing Faucets

For Factory Wash Sinks



No. 224



No. 225

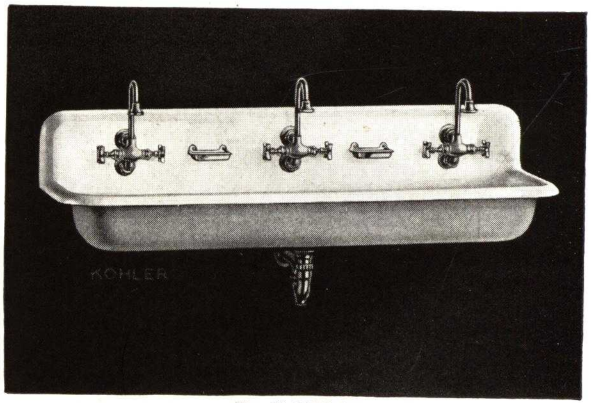
No. 224—With indexed brass lever handles and with 1¾-inch removable-face spray nozzle.

Regularly furnished with ¾-inch iron pipe male tail-pieces. Can also be furnished with ½-inch iron pipe male tail-pieces where so specified, at no extra cost. Center to center of supplies, 3 inches (vertically). Arranged for cold water line on top to minimize possibility of burns.

No. 225—Same as No. 224 except with gooseneck spout.

	Rough N.P.	Rough C.P.	Pol. C.P.
No. **224**....................each	....	....	....
No. **225**....................each	....	....	....

Available with ½-inch female flange shanks for use on sinks with back, at extra cost.



No. K-3210-A

Brockway Enameled Cast Iron Wash Sink with back and roll rim. Supported on concealed brackets.

Fittings: three ½-inch compression combination wash sink faucets with renewable seats, gooseneck sprays and metal handles, 2 soap dishes, 1½-inch metal strainer with coupling nut and tail-piece.

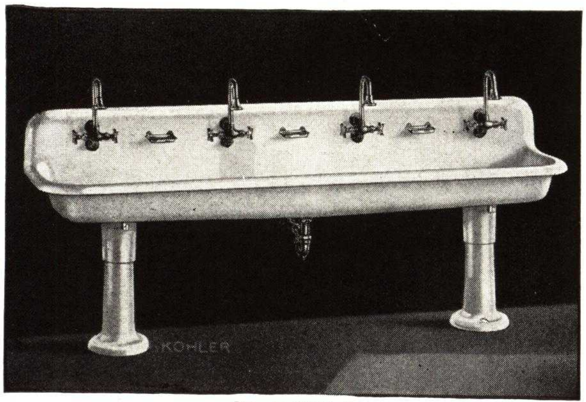
Trap: 1½-inch P pattern with metal wall flange.

Length....................feet	4	5	*6	*8
Number of Faucets............	2	3	3	4
Number of Soap Dishes.........	1	2	2	3
Width Overall...........inches	18	18	18	22
Width Inside.............inches	13¼	13¼	13¼	17¼
Depth Inside.............inches	7	7	7	8
Height of Back...........inches	8	8	8	10
Approx. Ship. Wt........pounds	160	200	250	570

Furnished enameled inside, painted outside.

Furnished in acid-resisting white enamel only.

*With adjustable pedestals. Floor to top of rim for short pedestals adjustable 25 to 31 inches; for long pedestals, 31 to 36 inches.



No. K-3212-A

Brinkworth Enameled Cast Iron Wash Sink with back and roll rim. Supported on concealed brackets and painted pedestals.

FITTINGS: Four ½-inch compression combination wash sink faucets with renewable seats, gooseneck sprays and metal handles, three soap dishes, 1½-inch metal grid strainer with coupling nut and tailpiece.

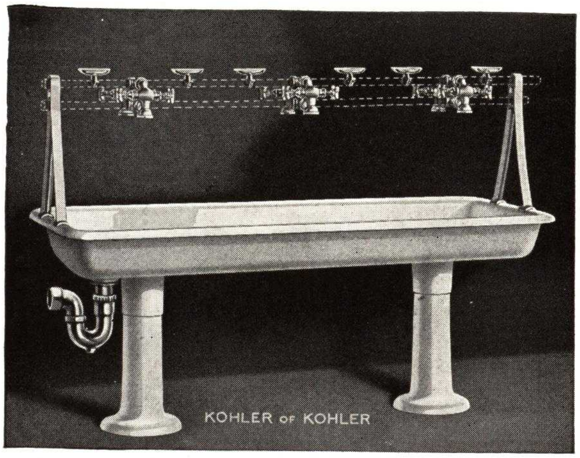
TRAP: 1½-inch P pattern with metal wall flange.

Length	feet	6	8
Number of Faucets		3	4
Number of Soap Dishes		2	3
Wall to Front	inches	22	22
Depth Inside at Outlet	inches	8	8
Height of Back	inches	10	10
Approximate Shipping Weight	pounds	390	570

Floor to top of rim, short pedestal, 25 to 31 inches; long pedestal, 31 to 36 inches.

Furnished enameled inside, painted outside.

Furnished in acid-resisting white enamel.



No. K-3220-A

Belden Enameled Cast Iron Wash Sink with roll rim, painted outside, and painted pipe supports over center of sink. Supported on painted pedestals.

FITTINGS: Six ½-inch compression double wash sink faucets with renewable seats, metal handles, six soap dishes and 1½-inch drain plug with metal grid and tail-piece.

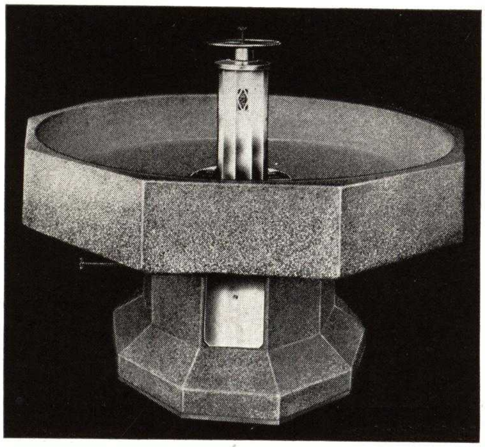
SUPPLY PIPES: Not furnished.

TRAP: 1½-inch P pattern with metal wall flange.

Length	ft.	4	5	6	8
Number of Faucets and Soap Dishes		4	6	6	8
Width Overall	in.	30	30	30	30
Width Inside	in.	26	26	26	26
Depth Inside at Outlet	in.	8	8	8	8
Approx. Ship. Wt., Less Fittings	lb.	400	435	515	560

Floor to top of rim, short pedestal, 25 to 31 inches; long pedestal, 31 to 36 inches.

Furnished in acid-resisting white enamel.



No. 100-H

Memco Wash Fountains made of precast marble, having all exposed surfaces of the bowl and pedestal ground to reveal the white marble aggregate, honed and polished. Attractive brown shade on all unground surfaces. Color of ground surface is white, with brown cement binder.

The construction of this fountain is such that water consumption is held to a minimum. Ten groups of holes, (water outlets) are drilled in the circumference of the spray head. Each group of holes is directed to a user at the fountain. There is no solid curtain of water, which would result if the water holes were drilled completely around the circumference of the spray head. Thus, no water is wasted by falling between users.

Spray head is a solid brass casting constructed in two sections, top and bottom. Bottom section screws on. Top section covers the holes which are drilled in the bottom piece.

By simply unscrewing the top piece with a spanner wrench, the holes and entire inside of the spray chamber are accessible for flushing and brushing out any foreign material. Available with either hand control or foot control on all models.

Standard equipment: cake soap tray, manually-operated mixing valve, volume control valve, self-cleaning spray head, center column, drain and trap. All exposed fittings are noncorrodible metal, chrome-plated. Available with large gang type soap dispensers, available for either liquid or powdered soap. Individual soap dispensers of any manufacture, can also be adapted. Can be furnished with water and vent from below; water and vent from above; water from below, vent from above; water from above, vent from below.

Furnished either 54 or 40-inch diameter. The 54-inch diameter fountain is 10-sided; the 40-inch diameter fountain is circular. State diameter in ordering.

Diameter	inches	40	54
No. of Users		6	10
Approximate Water Consumption	gpm.	4	5½
Shipping Weight	pounds	650	950

Bradley Washfountains

Designed expressly for modern group-washing requirements in large and small washrooms, wherever it is desired to accomplish group-washing efficiently and economically.

Materials

Pre-Cast Stone. Designated as Granito, fully ground and polished, sand color; Inergran, interior only ground and polished, sand colored interior, brown exterior; Bradstone, polished but not ground, brown color.

Pre-Cast Marble. Known as Marmorite, available in variegated or tinted colors; and Marmogran, white marble aggregate with sand-colored binder, all fully ground and polished.

Enameled Pressed Iron. Heavy steel, bonderized reinforced, acid-resisting, white enamel. Roll rim or deep apron bowls.

Stainless Steel. Bowls of stainless steel with pedestals of bonderized enameled iron to match roll rim or deep apron bowls.

Standard Equipment

Hand Controlled Fountains. Manually-operated mixing valves, manually-operated shut-off valves, and traps are standard equipment.

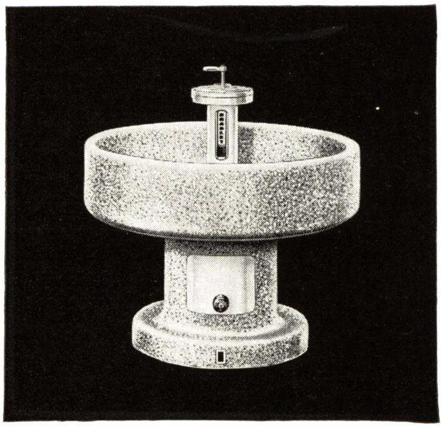
Foot Controlled Fountains. Manually-operated mixing valves, self-closing foot valves, and traps are standard equipment.

Soap Dispensers

Liquid and powdered soap dispensers are designed expressly for use on Bradley washfountains, attractive in appearance, simple in design, efficient, and easy to operate.

Dispenser domes are constructed of spun aluminum with base and center tube of metal.

Liquid soap valves of brass, powdered soap valves are made of a durable plastic, impervious to water, alkalies, and acids.



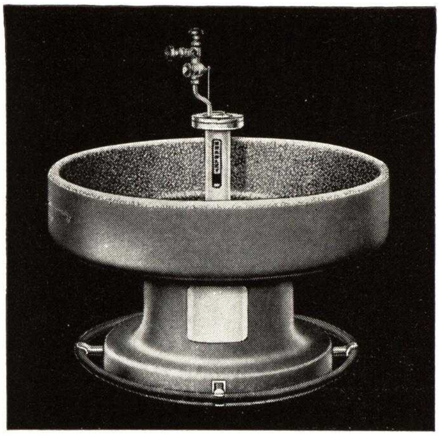
Type HHA, Hand Operated, 36-Inch Circular

Bradley Washfountain, circular design, with vari-colored Marmorite pre-cast marble bowl. Supported on matching pre-cast pedestal.

Fittings: Sprayhead, manually-operated mixing and volume control valves in pedestal, hand-operated shut-off valve at top of sprayhead. Supplies from below; direct rising vent.

Diameter .... inches	54	36
No. of Users	8–10	5–6

Type HFA. Same as above except with foot-operated self-closing valve in base.



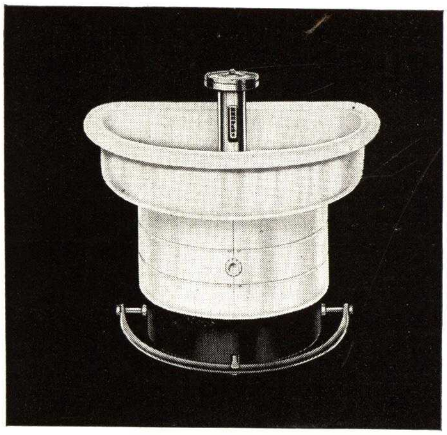
Type BFA, Foot Operated, 54-Inch Circular

Bradley Washfountain, circular design, with Inergran pre-cast stone bowl. Supported matching pre-cast pedestal.

Fittings: Sprayhead, exposed manually-operated mixing and volume control valves and foot-operated self-closing valve at top of sprayhead. Supplies from above; direct rising vent.

Diameter .... inches	54	36
No. of Users	8–10	5–6

Type BHA. Same as above except with hand-operated shut-off valve.



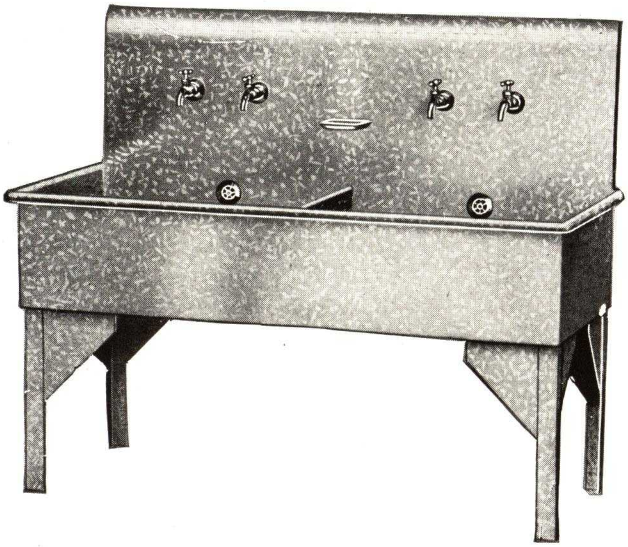
Type CFA, Foot Operated, 36-Inch Semi-Circular

Bradley Washfountain, semi-circular design, with acid-resisting white enameled steel bowl with roll rim. Supported on bonderized mild steel pedestal with acid-resisting synthetic enamel to match bowl; black scuff-ring base.

Fittings: Sprayhead, manually-operated mixing and volume control valves and foot-operated self-closing valve in pedestal. Supplies and vent through wall or floor.

Diameter .... inches	54	36
No. of Users	5–6	3

Type CHA. Same as above except with hand-operated shut-off valve.

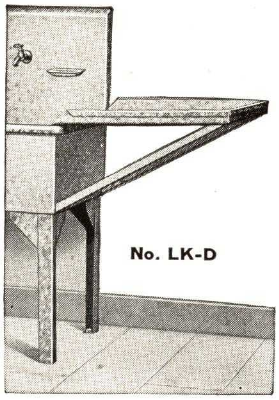


Series LK-8200 Elkay Galvanized Scullery Sink with two compartments, roll rim, front, bottom and back made of one sheet of 12-gage copper bearing blue annealed steel. Ends are welded in. Supported on galvanized adjustable angle legs with gusset plates, arranged to fasten to floor. All hot dipped galvanized after fabrication, insuring all edges against rust and corrosion. Drainboard is detachable and reversible and is 14-gage steel hot galvanized with angle braces and bolts for fastening to sink.

Fittings: Four compression faucets, one soap dish, and two connected drains and overflows with rubber stoppers.

Trap: Not furnished.

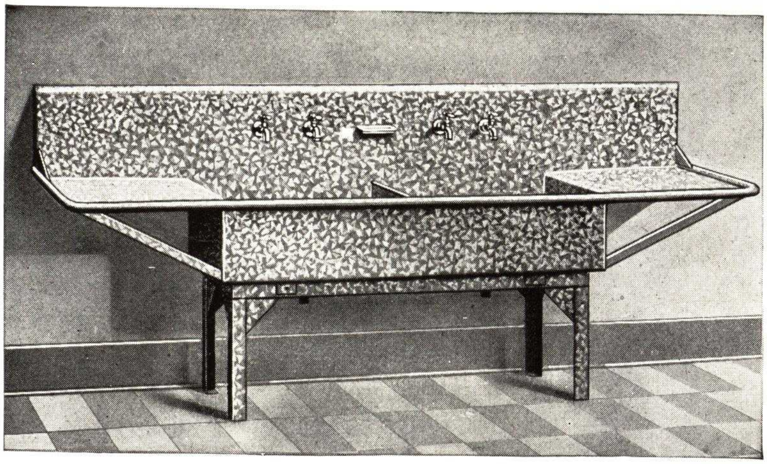
No.	LK-8230	LK-8236	LK-8242	LK-8248	LK-8254	LK-8260
Inside Size Each Compartment ....inches	15x24	18x24	21x24	24x24	27x24	30x24
Inside Depth.......inches	12	12	12	12	12	12
Ht. of Back.......inches	12	12	12	12	12	12
Floor to Rim.......inches	36	36	36	36	36	36
Ship. Weight.......pounds	130	142	154	166	178	190



No. LK-D

No. LK-D Detachable and Reversible Drainboards

Length.......inches	24	30	36	42	48	54	60
Width.......inches	24	24	24	24	24	24	24
Approx. Ship. Wt.......pounds	30	40	50	60	70	80	90



No. 60DB, with Double Drain Boards
No. 60, without Drain Boards

Elkay Government Type Scullery Sink with 2 compartments and integral drainboards.

Roll rim, front, bottom and back made of one sheet of 12-gage copper bearing blue annealed steel, coved at corners to prevent collection of grease and dirt.

Ends are welded in.

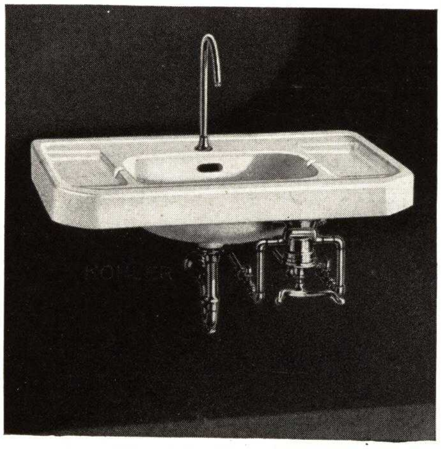
Supported on angle frame and legs with gusset plates arranged to fasten to floor. Frame and legs are detachable for shipping.

Fittings, 4 compression faucets, one soap dish, and 2 connected drains and overflows with rubber stoppers.

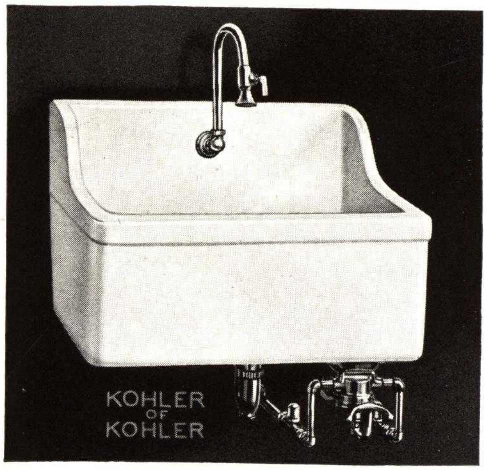
		With Double Drain Boards	Without Drain Boards
Nominal Size.......	inches		
Length Inside.......	inches	60	60
Width Inside.......	inches	24	24
Depth.......	inches	12	12
Length Each Drainboard.......	inches	24	..
Height of Back.......	inches	15	15
Floor to Rim.......	inches	36	36
Approximate Shipping Weight.......	pounds	325	235

Constructed in conformance with Federal Specification WW-P-541A, March, 1940, E-20, Fig. 47, Outfit S-108-D.

These sinks are hot dip galvanized after fabrication, insuring edges against rust and corrosion.



Surgeon's Vitreous China Lavatory
With Instrument Trays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Surgeon's Vitreous China Scrub-Up Sink

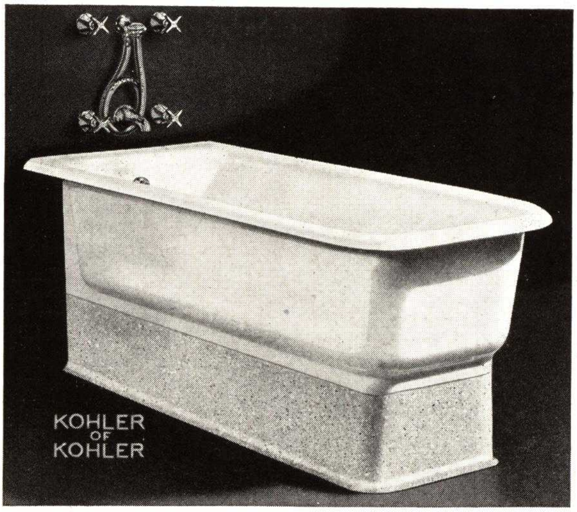
HOSPITAL FIXTURES

●

We offer a complete and up-to-date line of hospital fixtures by Kohler. This line is completely shown in a separate catalogue.

●

WE WILL BE GLAD TO FURNISH ANY INFORMATION DESIRED UPON REQUEST.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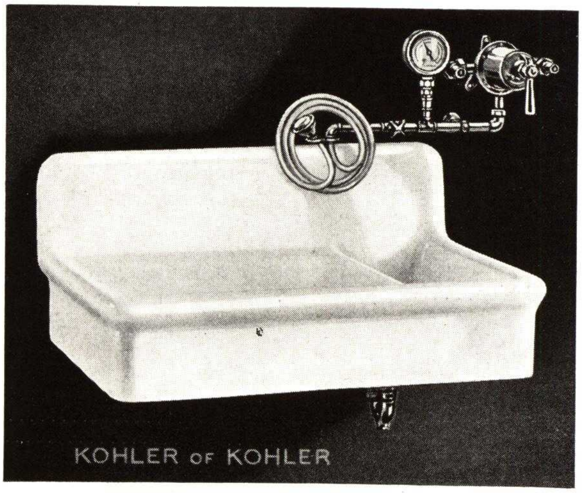
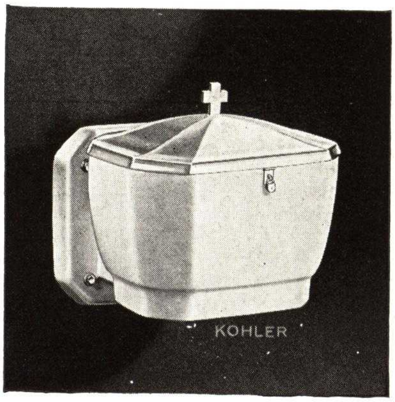
Acid-Resisting Enameled Cast Iron Bath


KOHLER OF KOHLER

Infant's Porcelain Bath



No. K-5375-A

Vitreous China Sacrarium with integral strainer. Supported on four wall screws with cap nuts and washers.

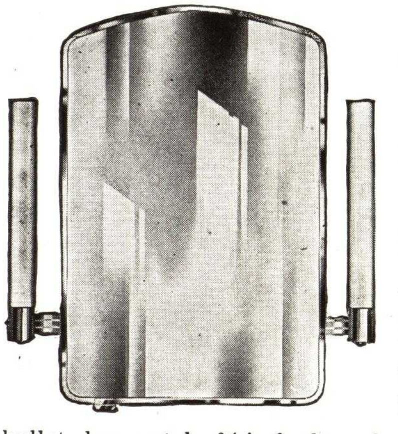
FITTINGS: Brass cover with hinge, hasp, and lock; drain pipe to wall.

EXPOSED METAL: Chromium plated.

Wall to Front of Bowl	inches	14
Width of Bowl Overall	inches	14
Approximate Shipping Weight	pounds	50

Furnished in white or colors.

No. 3254-55 Lawson Bathroom Cabinets



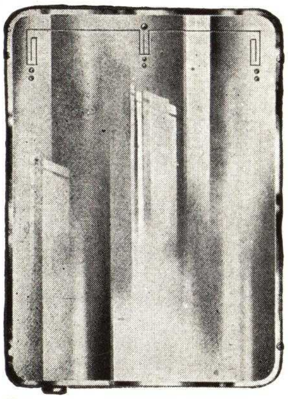
Framed Mirror

Seamless one-piece drawn steel body, rust proofed and finished in Hi-Lustre baked enamel; copper sealed plate glass mirror with stainless steel frame; adjustable stainless steel shelf supports and toothbrush holder; shock-absorbing bar-and-spring door stop; removable stainless steel razor blade box; full length chromium-plated brass piano hinge; bullet door catch; 3/16-inch clear glass shelves with bulb edge; and single tube lights on both sides.

Door size, 16x24 inches; required rough opening, 13⅝x20⅛x3½ inches; inside box depth, 4¼ inches; extreme light bracket spread, 21⅜ inches; No. of shelves, 3. Approximate shipping weight, 37 pounds.

Lawson Bathroom Cabinets

Venetian Mirror

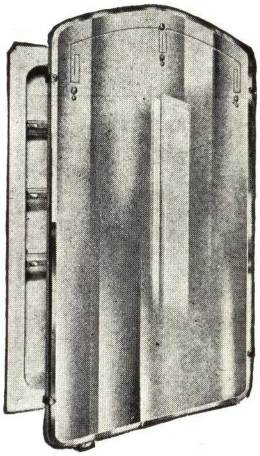


Seamless one-piece drawn steel body, rust proofed and finished in Hi-Lustre baked enamel; copper sealed plate glass mirror with stainless steel frame; adjustable stainless steel shelf supports and toothbrush holder; shock absorbing bar-and-spring door stop; removable stainless steel razor blade box; full length chromium-plated brass piano hinge; bullet door catch and 3/16-inch clear glass shelves with bulb edge.

No.	3177	3322
Door Size in.	16x22	18x24
Required Rough Opening in.	13⅝x19⅜x3½	16⅛x21⅜x3½
Inside Box Depth in.	4¼	4¼
No. of Shelves	3	4
Approx. Ship. Wt. lb.	27	35

Lawson Bathroom Cabinets

Venetian Mirror

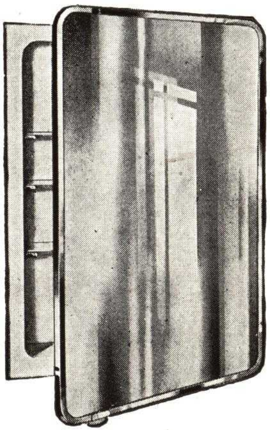


Seamless one-piece drawn steel body, rust proofed and finished in Hi-Lustre baked enamel; copper sealed plate glass mirror with stainless steel frame; adjustable stainless steel shelf supports and toothbrush holder; shock absorbing bar-and-spring door stop; removable stainless steel razor blade box; full length chromium-plated brass piano hinge; bullet door catch; and 3/16-inch clear glass shelves with bulb edge.

No.	3199	3388
Door Size in.	16x24	18x26
Required Rough Opening in.	13⅝x19⅜x3½	16⅛x21⅜x3½
No. of Shelves	3	4
Approx. Ship. Wt. lb.	29	36

Lawson Bathroom Cabinets

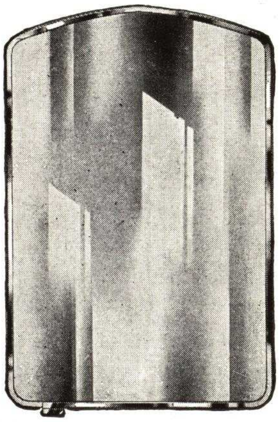
Framed Mirror



Seamless one-piece drawn steel body, rust proofed and finished in Hi-Lustre baked enamel; copper sealed plate glass mirror with stainless steel frame; adjustable stainless steel shelf supports and toothbrush holder; shock absorbing bar-and-spring door stop; removable stainless steel razor blade box; full length chromium-plated brass piano hinge; bullet door catch; and 3/16-inch clear glass shelves with bulb edge.

No.	3246	3447
Door Size in.	16x22	18x24
Required Rough Opening in.	13⅝x19⅜x3½	16⅛x21⅜x3½
Inside Box Depth in.	4¼	4¼
No. of Shelves	3	4
Approx. Ship. Wt. lb.	30	37

Lawson Bathroom Cabinets



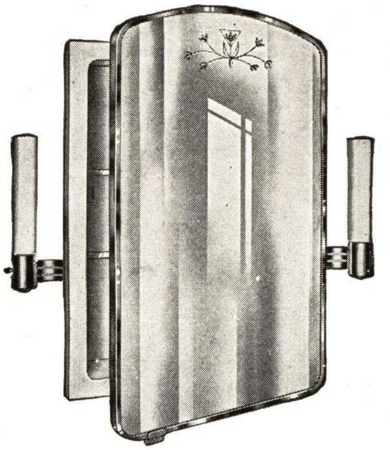
Framed Mirror

Seamless one-piece drawn steel body, rust proofed and finished in Hi-Lustre baked enamel; copper sealed plate glass mirror with stainless steel frame; adjustable stainless steel shelf supports and toothbrush holder; shock absorbing bar-and-spring door stop; removable stainless steel razor blade box; full length chromium-plated brass piano hinge; bullet door catch; and 3/16-inch clear glass shelves with bulb edge.

No.	3254	3440
Door Size in.	16x24	18x26
Required Rough Opening in.	13⅝x19⅜x3½	16⅛x21⅜x3½
Inside Box Depth in.	4¼	4¼
No. of Shelves	3	4
Approx. Ship. Wt. lb.	32	39

No. 4121-50 Lawson Economy Bathroom Cabinets

Framed Mirror

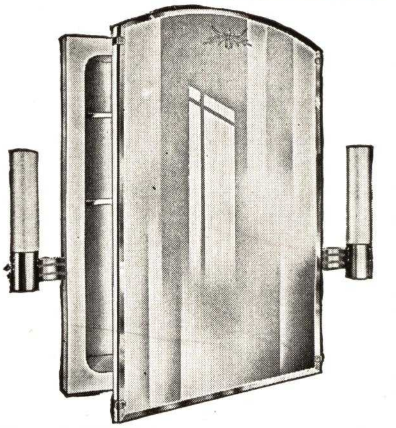


Seamless one-piece drawn steel body; mirror of select silvering quality window glass with etched design, copper sealed; highly polished stainless steel frame; bulb-edged glass shelves with multi-selector adjustment; toothbrush holder; razor blade drop; bullet door catch; nickel-plated door stop; 16-inch continuous piano type hinge; and single tube lights on both sides.

Door size, 16x22 inches; required rough opening, 14x18¾x3½ inches; inside box depth, 4¼ inches; extreme light bracket spread, 21¾ inches; No. of shelves, 2; approx. ship. wt., 26 lb.

No. 4145-50 Lawson Economy Bathroom Cabinets

Venetian Mirror



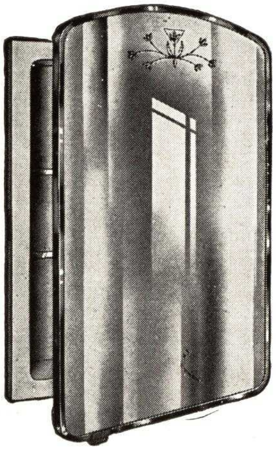
A Venetian style cabinet with seamless one-piece drawn steel body; copper sealed 3/16-inch mirror of select silvering quality window glass, bulb-edged glass shelves with multi-selector adjustment; toothbrush holder; razor blade drop; bullet door catch; nickel-plated door stop; 16-inch continuous piano type hinge; and single tube lights on both sides.

Door size, 16x22 inches; required rough opening, 14x18¾x3½ inches; inside box depth, 4¼ inches; No. of shelves, 2.

Approximate shipping weight, 29 pounds.

No. 4121 Lawson Economy Bathroom Cabinets

Framed Mirror



Seamless one-piece drawn steel body; mirror of select silvering quality window glass with polished stainless steel frame; bulb-edged glass shelves with multi-selector adjustment; toothbrush holder; razor blade drop; bullet door catch; nickel-plated door stop; and 16-inch continuous piano type hinge.

Door size, 16x22 inches.

Required rough opening, 14x18x3½ inches.

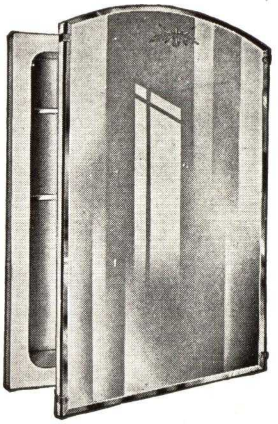
Inside box depth, 4¼ inches.

Number of shelves, 2.

Approximate shipping weight, 19 pounds.

No. 4145 Lawson Economy Bathroom Cabinets

Venetian Mirror



A venetian style cabinet with seamless one-piece drawn steel body; copper sealed 3/16-inch mirror of select silvering quality window glass; bulb-edged glass shelves with multi-selector adjustment; toothbrush holder, razor blade drop; bullet door catch; nickel-plated door stop; and 16-inch continuous piano type hinge.

Door size, 16x22 inches.

Required rough opening, 14x18x3½ inches.

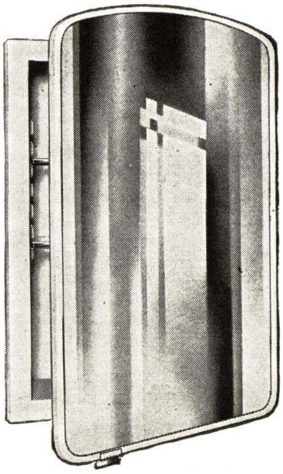
Inside box depth, 4¼ inches.

Number of shelves, 2.

Approximate shipping weight, 22 pounds.

No. 5010 Lawson Bathroom Cabinets

Framed Mirror



Especially for production homes.

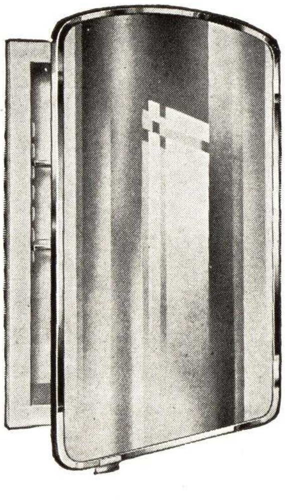
One-piece welded steel body with white enamel finish; mirror of select silvering quality window glass, copper sealed; white enameled mirror frame; bulb-edged glass shelves; nickeloid toothbrush holder; razor blade drop; nickel-plated bullet door catch; and 12½-inch continuous piano type hinge, white enameled.

Door size, 14x20 inches; required rough opening, 12¼x16⅜x3½ inches; inside box depth, 4¼ inches; No. of shelves, 2.

Approximate shipping weight, 12 pounds.

No. 5011 Lawson Bathroom Cabinets

Framed Mirror



Especially for production homes.

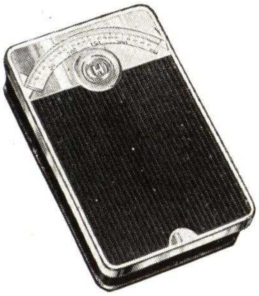
One-piece welded steel body with white enamel finish; mirror of select silvering quality window glass, copper sealed; one-piece stainless steel frame; bulb-edged glass shelves; nickeloid toothbrush holder; razor blade drop; nickel-plated bullet door catch; and 12½-inch continuous piano type hinge, white enameled.

Door size, 14x20 inches; required rough opening, 12¼x16⅜x3½ inches; inside box depth, 4¼ inches; No. of shelves, 2.

Approximate shipping weight, 12 pounds.

No. 733 Hanson Health Scales

Capacity, 250 Pounds



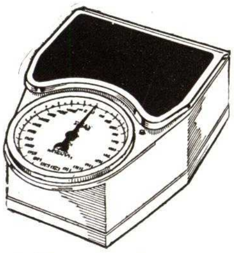
A new type of mechanism, having only four moving parts, no gears or racks to wear out.

Heavily built for extra long life and carefully tested and certified as to accuracy.

Easy to read, modern style speedometer dial protected by non-breakable glass, with a temper-proof, adjusting screw. The mechanism is fully enclosed with rounded corners and no projecting parts which makes it easy to clean.

Size, 12¾x8$\frac{1}{16}$x3⅝ inches. Platform 12¾x8$\frac{1}{16}$ inches with linoleum mat insert. All enamel finish in three colors: green, white and ivory. One in a box. No. **733**, Shipping Weight, 11 Pounds..........each **$4.50**

No. 767 Hanson Petite Bathroom Scales



Capacity, 250 pounds, graduated by pounds.

Platform, 7x10 inches, with rubber mat insert. Height, 5 inches; width, 10 inches and length, 14 inches.

Has 6½-inch legible dial. Figures and graduations in black on white, protected by extra heavy glass.

Standard colors are ivory and white.

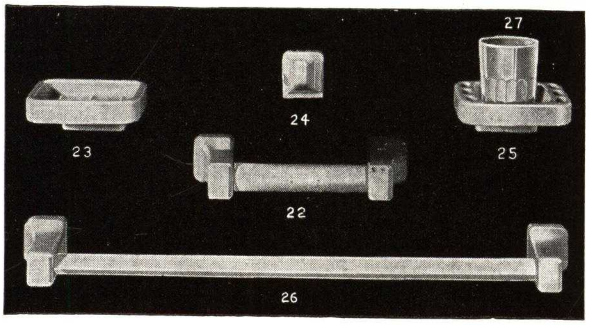
Tolerance, 8 ounces up to 175 pounds and 16 ounces from 175 to 250 pounds.

Net weight of scale, 15¼ pounds. Packed 1 to a corrugated carton, Case lots of 3, 50 pounds, packed.

No. **767**..each **$8.50**

Daintee China Bathroom Fixtures

With Metal Slides



Daintee designs are particularly suitable for restricted wall space but are large enough to be practical.

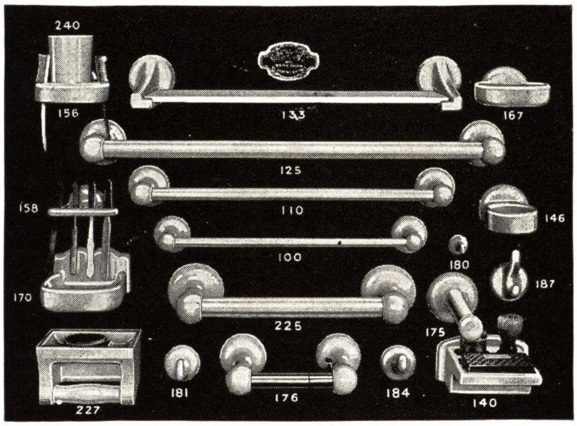
They have concealed cleat method of attachment; no screws are visible. Fixtures are removable for cleaning.

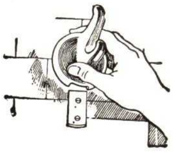
Finished in white, black, orchid or green.

Plate No.	Description	Each
22	Paper Holder	$.42
23	Soap Holder	.32
25	Tumbler and Tooth Brush Holder	.32
26	*Towel Rack, 18 Inches Long	.56
26	*Towel Rack, 24 Inches Long	.66
26	*Towel Rack, 30 Inches Long	.76
24	Hook	.22

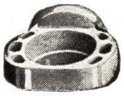
*Furnished with either white wood bar with white posts, black wood bar with black posts, or green wood bar with green posts, orchid wood bar with orchid posts.

Easy Set China Bath Room Accessories





The fittings are fastened to the wall by means of a bevel plate screwed to wall over which the fitting is slipped in place. The illustration at the right shows a top view of the No. 156.



Towel Racks

Length......inches	15	18	24	30	36
White—With Round Oval Bar					
No. **100**, ½-Inch.......each	**$1.65**	**$1.75**	**$1.95**	**$2.15**	....
No. **110**, ¾-Inch.......each	**2.40**	**2.55**	**2.80**	**3.05**	**$3.30**
No. **125**, 1-Inch........each	**3.35**	**3.50**	**3.90**	**4.35**	**4.80**
Black—With Round Opal Bar					
No. **100**, ½-Inch.......each	**$1.80**	**1.90**	**2.10**	**2.30**	....
Black—With Black Glass Bar					
No. **110**, ¾-Inch.......each	....	**$2.95**	**$3.20**	**$3.50**	**$3.80**
No. **125**, 1-Inch........each	....	**4.00**	**4.50**	**5.00**	**5.50**
Black or Stock Colors—Crystal Glass Bar					
No. **110**, ¾-Inch.......each	....	**$2.35**	**$2.50**	**$2.70**	**$2.90**
No. **125**, 1-Inch........each	....	**3.00**	**3.30**	**3.60**	**4.00**
Special Colors Other Than Stock Colors—Crystal Glass Bar					
No. **110**, ¾-Inch.......each	....	**$3.95**	**$4.10**	**$4.30**	**$4.50**
No. **125**, 1-Inch........each	....	**5.40**	**5.70**	**6.00**	**6.40**

Shelves, 5 Inches Wide

Length..........inches	18	24	30	36
White Brackets—Opal Shelf				
No. **133**, $\frac{5}{16}$-Inch Thick.....each	**$4.40**	**$4.70**	**$5.50**	**$6.60**
No. **1338**, $\frac{7}{16}$-Inch Thick....each	**6.40**	**7.20**	**8.10**	**10.80**
Black Brackets—Black Shelf				
No. **133**, $\frac{5}{16}$-Inch Thick.....each	**$5.00**	**$5.50**	**$6.40**	**$8.30**
No. **1338**, $\frac{7}{16}$-Inch Thick....each	**7.70**	**8.90**	**10.30**	**14.10**
Black or Stock Colors—Crystal Shelf				
No. **133**, ¼-Inch Thick.....each	**$4.10**	**$4.60**	**$5.10**	**$5.80**
No. **1338**, $\frac{7}{16}$-Inch Thick....each	**7.10**	**7.90**	**8.80**	**12.30**
Special Colors Other Than Stock Colors—Crystal Shelf				
No. **133**, ¼-Inch Thick.....each	**$6.90**	**$7.40**	**$7.90**	**$8.60**
No. **1338**, $\frac{7}{16}$-Inch Thick....each	**9.90**	**10.70**	**11.60**	**15.10**

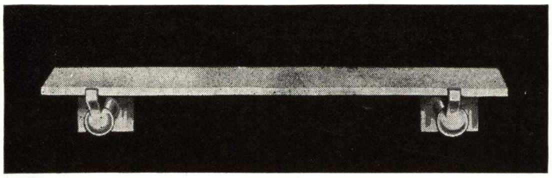
Miscellaneous

No.	Description	White Each	Black or Stock Colors of Orchid or Green Each	Special Colors Each
146	Tumbler Holder	**$.90**	**$1.00**	**$2.20**
156	Toothbrush and Tumbler Holder	**1.00**	**1.10**	**3.00**
159	Toothbrush Holder (for 6 Toothbrushes and Tooth Paste)	**.90**	**1.00**	**2.40**
167	Soap Holder for Lavatory	**.90**	**1.00**	**2.80**
***168**	Soap Holder with Drain Holes	**1.00**	**1.10**	**3.00**
170	Soap Holder for Bathtub or Kitchen	**1.25**	**1.40**	**3.60**
†171	Soap Holder with Drain Holes	**1.35**	**1.50**	**3.80**
175	Paper Holder	**1.05**	....	....
176	Paper Holder	**2.00**	**2.20**	**4.50**
180	Wash Cloth Hook	**.35**	**.45**	**.70**
181	Razor Strop Hook	**.55**	**.65**	**1.10**
184	Single Robe Hook	**.65**	**.75**	**1.40**
187	Double Robe Hook	**.70**	**.80**	**1.50**
227	Combination Soap Holder and Grab	**3.00**	**3.30**	**6.25**
240	Tumbler	**.40**	....	....

*Same design as No. 167. †Same design as No. 170.

Unity China Recess Bathroom Accessories

No. 334 Shelves

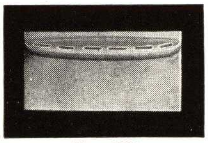


Loose fitting shelf, clincher back, 5 inches wide. Supported on one-piece bracket. Flanges, 3x3 inches.

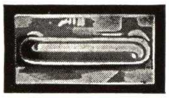
Opal glass shelves are regularly furnished with white brackets, black shelves with black brackets and crystal shelves with colored brackets.

Length Inches	White Brackets Opal Glass Shelves Each	Black Brackets Black Glass Shelves Each	Color Brackets Crystal Glass Shelves Each
18	$2.10	$2.65	$3.90
24	2.35	2.90	4.15
30	2.60	3.15	4.40
36	3.10	3.65	4.90
Brackets Only....per pair	1.10	1.40	3.00

Holders



No. 320



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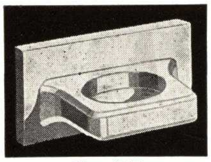

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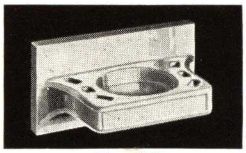

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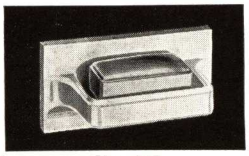
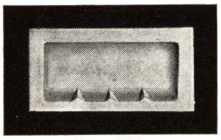


No. 345

No. 381



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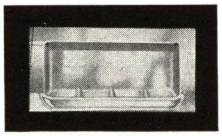
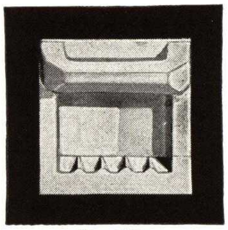


No. 367

All numbers shown are 6x3 inches except No. 381 which is 3x3 inches.

No.	Description	White Gloss Each	Black Gloss Each	Colors Harmonizing with Tile Each
320	Clincher Back Toothbrush Holder.	$.60	$.90	$1.70
326	Clincher Back Hand Rail..........	1.30	1.70	2.90
347	Projecting Clincher Back Tumbler Holder..........................	.80	1.00	1.90
357	Projecting Clincher Back Tumbler and Toothbrush Combination (for 6 Brushes)......................	.90	1.10	2.00
345	Projecting Clincher Back Soap Holder..........................	.80	1.00	1.90
381	Clincher Back Razor Strop Hook..	.40	.50	.90
366	Recess Flush Drain Soap Holder...	.70	.90	1.70
367	Recess Non-Draining Lip Soap Holder..........................	.70	.90	1.70

Unity China Recess Bathroom Accessories



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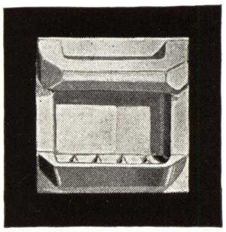

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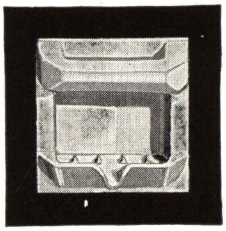

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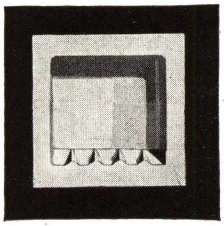

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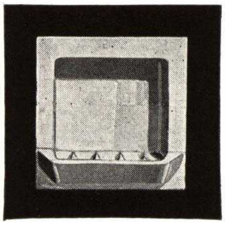

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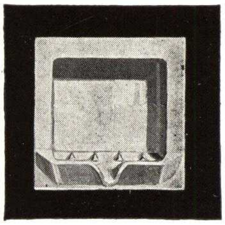
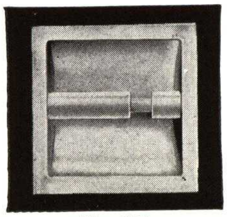
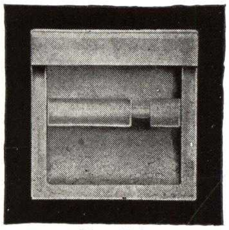


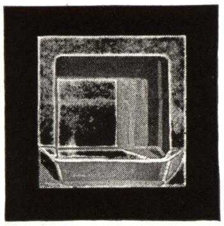
No. 608



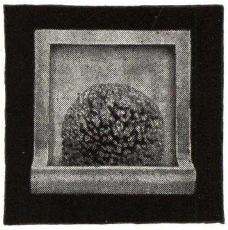
No. 611



No. 612



No. 615



No. 617

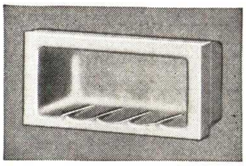
Nos. 601 to 608, recess into wall, 2⅝ inches. Nos. 611, 612, and 615, recess into wall, 3⅜ inches. No. 617, recess into wall, 2½ inches. Sizes, 6x6 inches.

No.	Description	White Each	Black Each	Colors Each
601	Flush Drain Soap and Grab Combination........................	....	....	....
602	Soap and Grab Combination with Lip..........................	....	....	....
603	Lip Drain Soap and Grab Combination........................	....	....	....
606	Flush Drain Soap Holders.......	....	....	....
607	Soap Holders with Lip..........	....	....	....
608	Lip Drain Soap Holders..........	....	....	....
611	Wood Roller Paper Holders.....	....	....	....
612	Wood Roller Paper Holders, with Hood.........................	....	....	....
615	Tumbler Holders................	....	....	....
617	Sponge Holders.................	....	....	....

Hall-Mack Standard Cement-In Vitreous China Bathroom Accessories

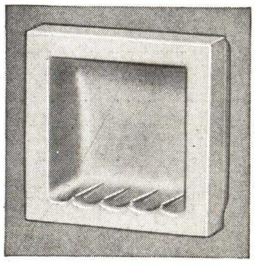
Regularly furnished in white. Furnished also in black or to order in color harmonizing with any tile or plumbing color.

No. 2136 Recessed Soap Holders



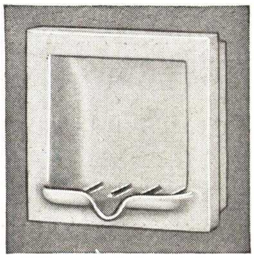
Size, 6x3 inches, flush.
No. **2136**........each ....

No. 2166 Recessed Soap Holders



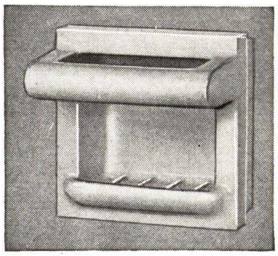
Size, 6x6 inches, flush.
No. **2166**.........each ....

No. 2167½ Recessed Soap Holders



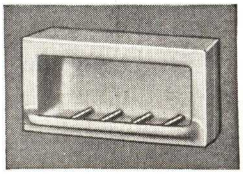
Size, 6x6 inches, drain.
No. **2167½**.......each ....

No. 2667 Recessed Soap and Grab Combinations



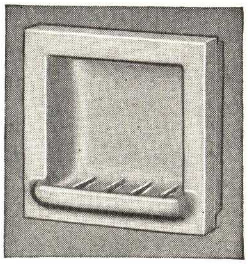
Size, 6x6 inches, lip.
No. **2667**. ....each ....

No. 2137 Recessed Soap Holders



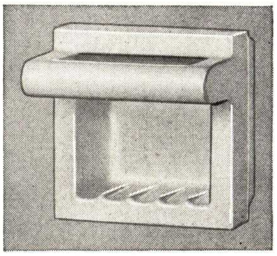
Size, 6x3 inches, lip.
No. **2137** ....each ....

No. 2167 Recessed Soap Holders



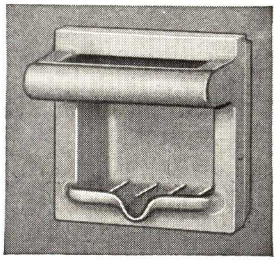
Size, 6x6 inches, lip.
No. **2167**.........each ....

No. 2666, Recessed Soap and Grab Combinations



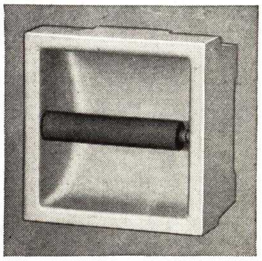
Size, 6x6 inches, flush.
No. **2666**.........each ....

No. 2667½ Recessed Soap and Grab Combinations



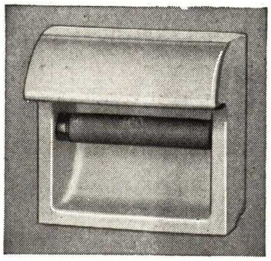
Size, 6x6 inches, drain.
No. **2667½**.......each ....

No. 2766 Recessed Roll Paper Holders



Size, 6x6 inches, flush.
No. **2766**........each ....

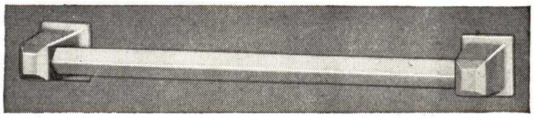
No. 2769 Recessed Roll Paper Holders



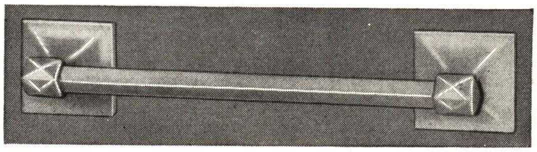
Size, 6x6 inches, hood.
No. **2769**........each ....

Towel Bars

Bars are ⅞ inch square. Standard lengths, 18, 24, 30, and 36 inches. Bars may be had in white, black or colored pyralin covered wood; or in crystal, open, or black glass. Specify kind and length of bar desired.

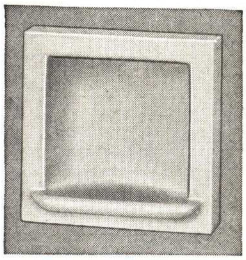


No. **2900**, Lug Back Posts......................each ....
No. **2933**, 3x3-Inch Clincher Back Posts ....each ....



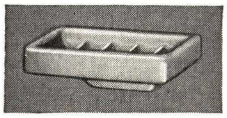
No. **2944**, 4¼x4¼-Inch Clincher Back Posts ....each ....

No. 2466 Recessed Tumbler Holders



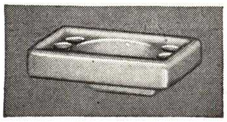
Size, 6x6 inches, flush.
No. **2466**........each ....

No. 2200 Soap Holders



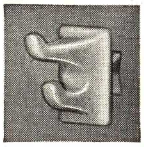
Lug back.
No. **2200**........each ....

No. 2300 Tumbler and Toothbrush Holders



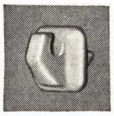
Lug back.
No. **2300**........each ....

No. 2820 Double Hooks



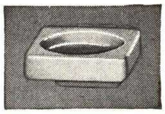
Lug back.
No. **2820**........each ....

No. 2800 Strop Hooks



Lug back.
No. **2800**........each ....

No. 2400 Tumbler Holders



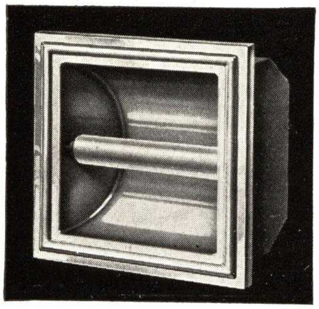
Lug back.
No. **2400**.........each ....

Hall-Mack Vitreous China Built-In Bathroom Accessories

Flange Type

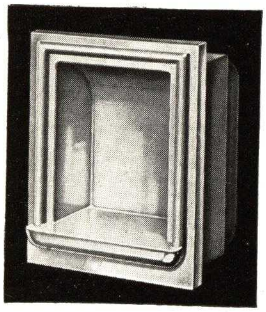
All Hall-Mack Vitreous China Accessories can be furnished in color harmonizing with any tile or plumbing fixture.

No. 2767 Recessed Roll Paper Holders



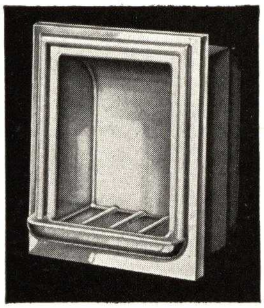
No.	2767
White, each	...
Black, each	...
Wall Opening, in.	6x6
Flange Overall, in.	6¾x6¾

No. 2464 Recessed Tumbler Holders



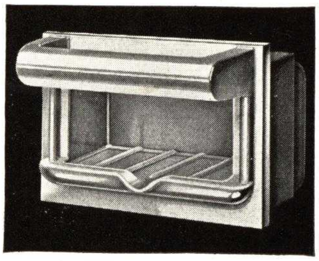
No.	2464
White, each	...
Black, each	...
Wall Opening, in.	4¼x6
Flange Overall, in.	5 x6¾

No. 2165 Recessed Soap Holders



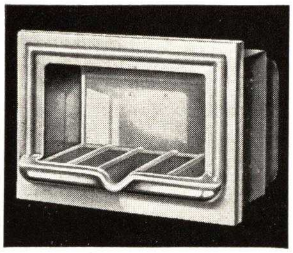
No.	2165
White, each	...
Black, each	...
Wall Opening, in.	4¼x6
Flange Overall, in.	5 x6¾

No. 2665½ Recessed Soap and Grab Combinations



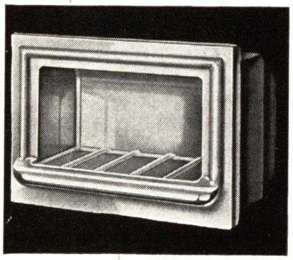
No.	2665½
White, each	...
Black, each	...
Wall Opening, in.	6 x4¼
Flange Overall, in.	6¾x5

No. 2163½ Recessed Soap Holders



No.	2163½
White, each	...
Black, each	...
Wall Opening, in.	6 x4¼
Flange Overall, in.	6¾x5

No. 2163 Recessed Soap Holders



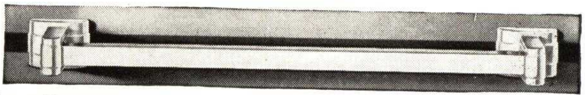
No.	2163
White, each	...
Black, each	...
Wall Opening, in.	6 x4¼
Flange Overall, in.	6¾x5

Hall-Mack Chinavogue Screw-On Bathroom Accessories

These accessories are smartly styled, with the design carried throughout every piece in the line. Any combination of fixtures will make a matched set.

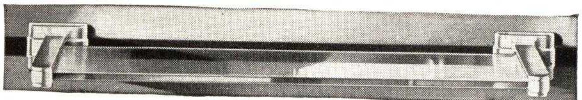
Furnished as standard in white and gloss black. Can also be furnished on order, in color harmonizing with plumbing fixtures, tile, glass, or any other material of which a sample is furnished.

Towel Bars



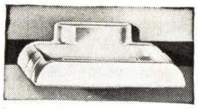
Length, inches	18	24	30	36
No. **990**, ¾-In. Sq. Pyralin Covered Bar, each	....	....	....	....
No. **994**, ¾-In. Sq. Chromium Plated Bar, each	....	....	....	....

No. 901 Glass Shelves



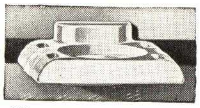
Length, inches	18	24	30
No. **901**, 5-Inch Crystal Shelf, each	....	....	....

No. 920 Soap Holders



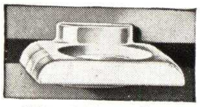
No. **920** each....

No. 930 Tumbler and Tooth-Brush Holders



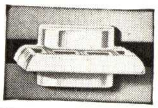
No. **930** each....

No. 940 Tumbler Holders



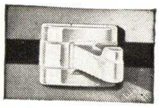
No. **940** each....

No. 950 Tooth-Brush Holders



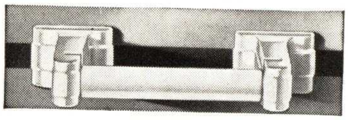
No. **950**.......each ....

No. 981 Utility Hooks



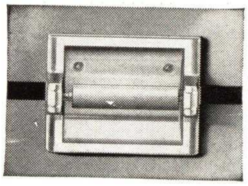
No. **981**........each ....

No. 971 Paper Holders



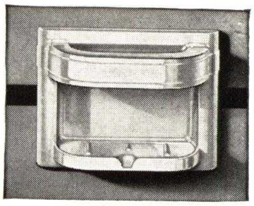
No. **971**........ each....

No. 976 Recessed Paper Holders



Recess, 5¾x4¼x1 inches.
Flange, 6½x5 inches.
No. **976**........each ....

No. 965 Recessed Soap Holders and Grab Bars



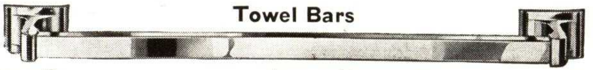
Recess, 5¾x4¼x1 inches.
Flange, 6½x5 inches.
No. **965**.........each ....

The surface attached fixtures are easily installed by means of a wedge-shaped metal plate, which is screwed to the wall. A slot in the back of the fixture fits down over this plate, giving the fixture a built-in appearance.

The recessed paper holder and the soap holder and grab bar combination are installed by screws through the back of the fixture. The location of the screws makes them practically invisible after installation. Wall opening must have backing to take wood screws or toggle bolts.

Hall-Mack Coronado Chromium Plated Bathroom Accessories

Towel Bars



Length....................in.	18	24	30	36
No. **694**, ¾-In. Sq. Chrome Bar...................each	.....	.....	.....	.....
No. **695**, ¾-In. Rd. Chrome Bar...................each	.....	.....	.....	.....

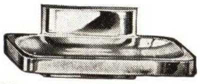
No. 601 Glass Shelves

Length.......................inches	18	24	30
No. **601**, 5-inch Crystal Shelf....each	.....	.....	.....

No. 660 Soap Holders and Grab Bars

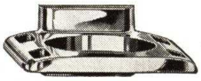
No. **660**...each .....

No. 622 Soap Holders



No. **622** each.......

No. 630 Tumbler and Tooth Brush Holders



No. **630** each ...

No. 640 Tumbler Holders

No. **640** each ...

No. 650 Tooth Brush Holders

No. **650** each ...

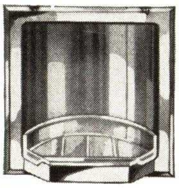
Paper Holders

No. **670** each ...
*No. **671** each ...
*With wood roller.

No. 681 Hooks

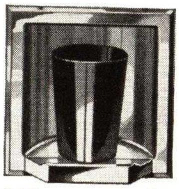
No. **681** each ...

No. 625 Soap Holders



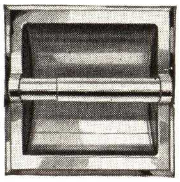
No. **625**.........each .....

No. 645 Tumbler Holders



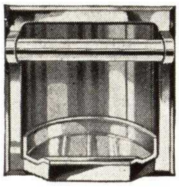
No. **645**........each .....

Paper Holders



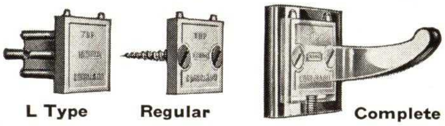
No. **675**.........each .....
No. **676**, with Wood Roller........each .....

No. 665 Soap Holders and Grab Bars



No. **665**........each .....

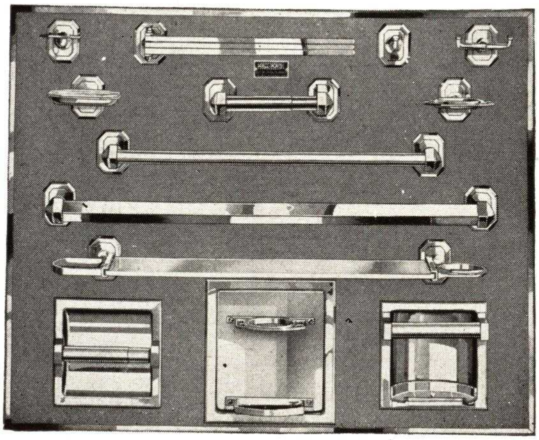
Concealed Screw Mounting Device



L Type Regular Complete

No screw heads can mar streamline appearance of Coronado accessories, because they are concealed beneath the base of the fixture. Accessories are regularly furnished for screw or toggle bolt installation, but are also available with lugs for setting in cement. Specify L type if wanted for cement installation.

Hall-Mack Aristocrome Forged Brass Bathroom Accessories



No. 394 Square Towel Bars—⅞ Inch

Chromium plated.

Furnished in 18, 24, 30 and 36-inch lengths.

Round Towel Bars—¾ Inch

No. 395. Chromium plated. Furnished in 18, 24, and 30-inch lengths.

No. 396. Crystal glass. Furnished in 18, 24 and 30-inch lengths.

Glass Shelves, 5 Inches Wide

No. 301. Crystal. Furnished in 18, 24 and 30-inch lengths.

No. 311. Shelf comb, crystal. Furnished in 18, 24 and 30-inch lengths.

Miscellaneous

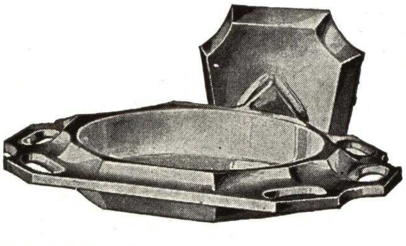
No.	Description
320	Non-Draining Soap Holder.
321	Soap Holder with Drain Holes.
322	Soap Holder with Unbreakable Crystal Soap Tray.
323	Large Soap Holder.
324	Large Soap Holder with Drain Holes.
325	Recess Type Soap Holder with Unbreakable Crystal Soap Tray.
330	Tumbler and Toothbrush Holder (Holds 6 Brushes).
338	Concealed Lavatory Unit.
340	Tumbler Holder.
345	Recess Type Tumbler Holder.
350	Toothbrush Holder (Holds 5 Brushes).
365	Recess Type Unbreakable Crystal Soap Tray and Grab.
370	Projecting Toilet Paper Holder with Chromium Roller.
375	Recess Type Toilet Paper Holder with Chromium Roller.
381	Robe or Bag Hook, 2½ Inches Long.
382	Towel Pin, 5 Inches Long.
383	Double Robe Hooks.
390	Square Grab Bar, 8 Inches Long, ⅞ Inch Square.
395	Round Grab Bar, 8 Inches Long, ¾ Inch Diameter.
399	3-Arm Swing Bar.
305	Recess Mirror Shelf.

If fixtures are to be installed with screws or toggle bolts add "S" to No. If fixtures are to be installed in tile by setting in cement add "L" to No. The wall opening for all recessed fixtures is 5¼x5¼x2 inches. "S" type fixtures screw into wood buck through back of recess. Special length towel bars and shelves made to order.

E-Z Krome Bathroom Accessories

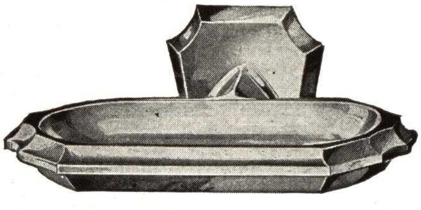
Attached Type—Keystone Design

No. 2156 Tumbler and Toothbrush Holders



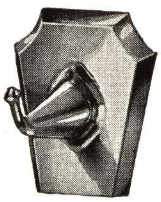
No. **2156**, Holds 6 Toothbrushes.................each **$2.35**

No. 2167 Soap Holders



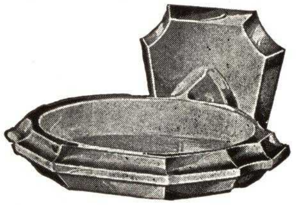
No. **2167**...each **$2.00**

No. 2184 Hooks



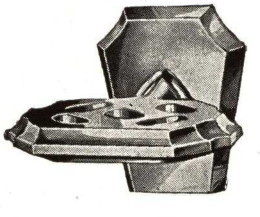
No. **2184**.......each ....

No. 2146 Tumbler Holders



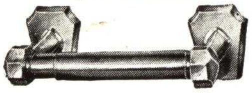
No. **2146**..........each **$2.35**

No. 2158 Toothbrush Holders



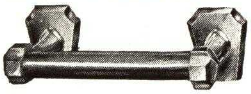
No. **2158**, Holds 5 Toothbrushes. ea. ....

Paper Holders



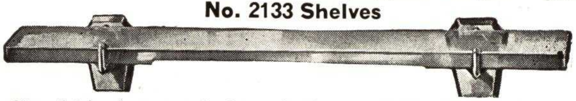
No. **2176**, Krome Roller..ea. **$3.10**
No. **2176½**, Wood Roller..ea. **2.75**

No. 2225 Hand Rails



Furnished with toggle bolts.
No. **2225**, ¾-In. Round Krome Bar, 4¾ In. Long. ea. **$3.20**

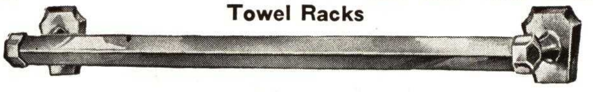
No. 2133 Shelves



Size ¼ inch crystal glass shelf regularly furnished. Wall brackets are equipped with holding springs.

Length.....................inches	18	24	30	36
¼-In. Crystal Glass Shelf....each	**$3.60**	**3.85**	**4.10**	**4.60**
5/16-In. Black Glass Shelf.....each	**4.25**	**4.40**	**4.90**	**5.40**

Towel Racks

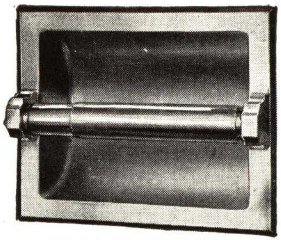


Krome bar regularly furnished unless otherwise specified.

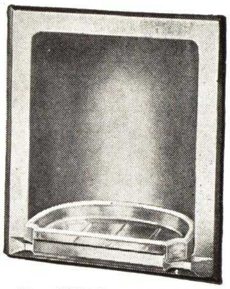
	No. 2110¾-In. Round Bar			No. 2127¾-In. Square Bar		
Length Inches	Krome Bar Each	Crystal Glass Bar Each	Black Glass Bar Each	Krome Bar Each	Crystal Glass Bar Each	Black Glass Bar Each
18	**$3.10**	**$3.10**	**$3.30**	**$3.50**	**$4.00**	**$5.00**
24	**3.25**	**3.25**	**3.50**	**3.75**	**4.25**	**5.25**
30	**3.40**	**3.40**	**3.70**	**4.00**	**4.50**	**5.50**
36	**3.65**	**3.65**	**4.00**	**4.40**	**5.00**	**6.00**

E-Z Krome Bathroom Accessories

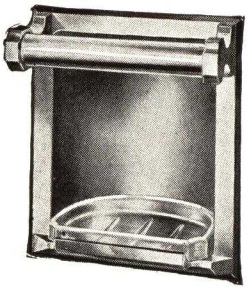
Recess Type—Flanged



No. 4611 Paper Holder



No. 4607 Soap Holder



No. 4602, Soap and Grab Rail Combination

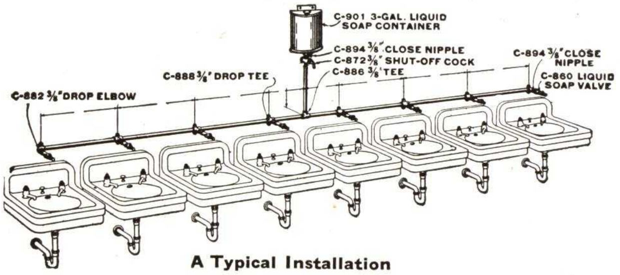
For use with 4¼-inch tile but equally adaptable to all other sizes of tile or plaster wall. Over all size of plain recess fixtures, 6 7/16x5 3/8 inches. Size of wall opening required, 5¼x4 3/16x1 15/16 inches.

Two perforated keys soldered to the back of each recess fixture have five holding surfaces each, for cement, mortar, etc.

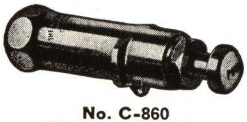
The body of each recess fixture is of one piece construction, while the parts used with it are held securely by means of brass screws and lock washers. The use of lock washers is most important as they hold the parts rigid at all times, and prevent loosening after installation.

No. **4602**, Soap and Grab Comb. with Tray.....each **$4.40**
No. **4607**, Soap Holder with Tray...............each **3.25**
No. **4611**, Paper Holder with Krome Roller.....each **3.35**
No. **4611½**, Paper Holder with Wood Roller....each **3.00**
No. **4615** Tumbler Holder.......................each **2.95**

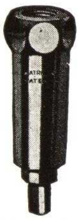
Watrous Gravity Liquid Soap Dispensing Systems



A Typical Installation



No. C-860 Horizontal Valve



No. C-862 Vertical Valve

This system operates wholly by the gravity principle—a simple valve delivers a predetermined supply of soap without drip or waste. An ideal system for factories, clubs, hotels, depots, hospitals, office buildings, etc. Any number of wash stands are served from one soap container.

Can be quickly and easily installed in old or new buildings with exposed piping or with all piping concealed.

Size iron pipe thread, ⅜ inch.

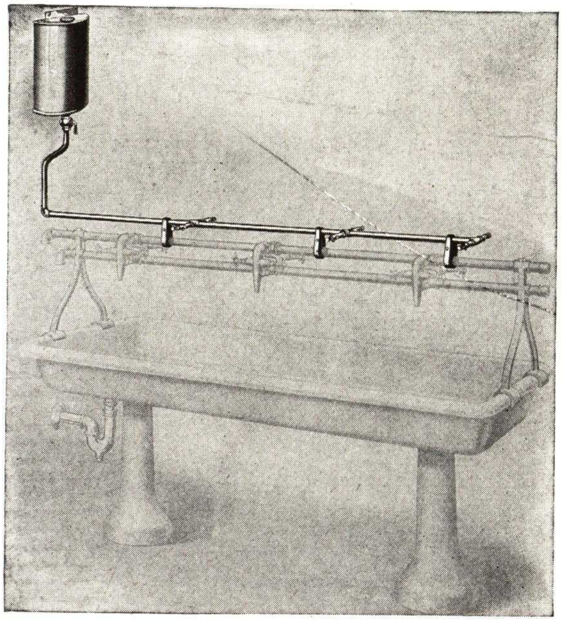
No.	Description	Each	No.	Description	Each
C-**860**	Horizontal Valve........	....	C-**888**	Drop Tee......	....
C-**862**	Vertical Valve..	....	C-**894**	Close Nipple...	....
C-**872**	Shut-Off Cock..	....	*C-**920**	One-Gallon Tank	....
C-**882**	Drop Elbow....	....	*C-**901**	Three-Gallon Tank........	....
C-**886**	Tee............	....	*C-**902**	Five-Gal. Tank	....

*Regularly furnished of black iron with aluminum or white enamel finish. Furnished of monel metal at added cost.

Catalog listing other styles of valves and tanks will be sent upon request.

Watrous Liquid Soap Gravity Systems

Factory Installation



The liquid soap tank is made of black iron, aluminum finish with automatic gauge. The horizontal valve is suitable for use over wash sinks. The soap pipe is attached to the water supply piping by special clamps.

No. **C-901**, 3-Gallon Tank	each	$6.50
No. **C-902**, 5-Gallon Tank	each	7.50
No. **C-860**, Soap Valve, ⅜-Inch I. P.	each	2.70
No. **C-874**, Pipe Clamp, Brass	each	.80
No. **C-872**, Shut-Off Cock	each	1.80

No. M-800 Watrous Liquid Soap Dispensers

WATROUS
PATENT

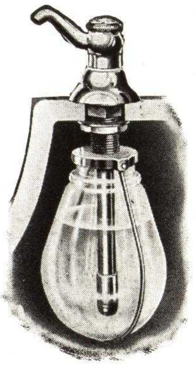
Can be attached to wall or back of lavatory.

Swivel bracket allows container to be inverted for refilling.

A slight upward pressure of hand on plunger at bottom of container delivers a measured quantity of soap into hand.

No. **M-800**, Nickel or Chromium Plated........each .....

No. M-801 Watrous Liquid Soap Dispensers



This plunger type dispenser fits lavatory tops up to 1¼ inch thick; also available up to 4½ inches. Delivers a measured quantity of soap, and is drip and leak-proof. To refill, unscrew push-button cap.

Finished in chromium plate, non-corrosive and positive in action.

Also available with all-metal container at extra cost.

No. **M-801**............each ....

No. M-807 Watrous Liquid Soap Dispensers

Horizontal type for attachment to wall, push-button action. Delivers a measured quantity of soap, and is drip and leakproof. Refilled through cap.

Also available with all-metal container at extra cost.

No. M-**807**, C. P............each ....

No. M-815 Watrous Liquid Soap Dispensers

This soap dispenser fastens to wall or back of lavatory. Measured quantity of soap delivered with each operation of plunger.

The container has a swivel bracket so it can be inverted for refilling.

Chromium plated finish.

No. M-**815**.....................each ....

Watrous Liquid Soap Valves

For Lavatory Mounting

Mounted in the faucet hole of the lavatory and operates in a vertical position. Delivers a measured quantity of soap when button on top is pushed down.

Shank fits standard 1¼-inch faucet hole in lavatories up to 1½ inches thick. Has ¼-inch I.P.T. coupling nipple and nut for connecting to piping. Piping can be run through wall underneath lavatory, providing a completely concealed installation if desired.

No. C867 with chain stay, No. C866 without.

Made of bronze, heavily chromium-plated.

Height, spout to shank, 2 inches.

Weight, 14 ounces.

No. C-870 Watrous Liquid Soap Containers

Capacity, 1 Gallon

Glass container.

Galvanized cast iron bracket, tapped ⅜-inch iron pipe thread.

No. C-**870**, Complete	each	$3.50
No. C-**870A**, Reducing Cap for Glass Jar	each	.30
No. C-**870B**, Glass Jar	each	1.20
No. C-**870C**, Metal Base	each	2.70

Lucky Strike Rubber Flush Elbows

With Brass Fittings

No.	1¼"RE	1½"RE	*1½"x1¼"RE
Collar End........inches	1¼	1½	1½
Coupling, I.P.T....inches	1¼	1½	1¼
Standard Package	12	12	12
Package Weight...pounds	4	5	4½

*Reducing type.

Dur-A-Bal Tank Balls

DUR-A-BAL
LAVELLE RUBBER CO.
CHICAGO, U.S.A.

Made of black rubber; one-piece construction; semi-flexible top. Makes positive seal; allows quick tripping action.

Packed 1 in a carton, 12 in a display case.

No.	2½″DAB	2¾″DAB
Wt. per Doz........lb.	1¾	2

No. DTB Dandy Rubber Tank Balls

DANDY
CHICAGO
ZECO
USA

Adaptable to all standard valves.

Made of black tough gum compound. Has flexible neck and top and soft seating surface.

Individually packed, 12 in a display box; weight 2½ pounds.

No. 424 Fit One-Fit All Tank Balls

NO. 424
FIT ONE FIT ALL
TANK BALL

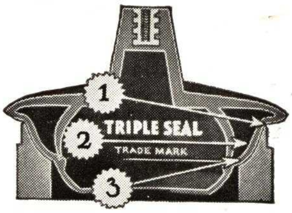
Made of a tough, black synthetic compound which will withstand long usage under unusual conditions.

Designed with a tapered seat to assure proper operation on all size flush valves.

Packed in individual cartons; 12 in a counter display unit.

Weight per individual carton, 1½ pounds.

Triple Seal Tank Balls



Cross Section Under Pressure

A patented flush ball that provides a triple seal at 3 vital points of the valve seat.

Ball is light and buoyant and allows a complete flush. Will not stick to valve. Flexible neck permits a perfect seat even if the rod is not straight.

Packed in individual cartons; 12 in a display box.

Standard Size, Fits Openings 2¼ through 2⅝ In. each	$1.00
Oversize, Fits Openings 2¾ through 3 Inches...each	1.25

Zeco No-Trouble Flush Balls

ZECO
"NO TROUBLE"
FLUSH BALL
2½ Inches

The Zeco No-Trouble is a special quality flush ball.

Size, 2½ inches in diameter.

Each ball is packed in an individual carton as shown.

Each.. .....

Star Tank Balls

Designed to render long service. Black stock with soft seating surface.

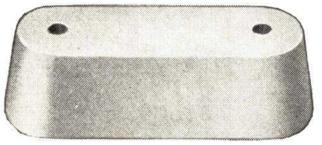
Made in 2½-inch size only.

Packed 12 in a box.

No.	2½ Star
Wt. per Box.............lb.	1½

Lucky Strike Bar Pattern Seat Bumpers

Plain Type



For toilet seats. With metal washers inserted. Color, white. Packed 100 in a box.

No.	15WBSB	25WBSB	35WBSB	45WBSB	55WBSB	*70WBSB
Length......in.	2⅛	2 15/32	2½	1¾	2¼	1⅝
Width.......in.	17/32	27/32	½	17/32	½	½
Height......in.	½	7/16	½	7/16	⅜	7/16
Weight per Package...lb.	2	3	3	3½	5	3

*Nails molded in head.

Lucky Strike Closet Seat Hinge Flat Washers

Black stock. Standard package, 100.

No.	SCSHW	LCSHW
Inside Diameter.in.	⅜	⅜
Outside Diameter...............in.	1	1⅛
Thickness.......in.	⅛	⅛
Package Weight.lb.	⅝	¾

No. HRSHW Lucky Strike Half Round Seat Hinge Washers

Made of black stock.

O.D., 1 3/16 inches; I.D., ½ inch; thickness ⅜ inch.

Standard package, 100.

Package weight, 1½ pounds.

Lucky Strike Rubber Headed Bumpers

Tack Bumpers

Standard package, 500.

White: No.	Per 100	Diam. Head In.	Wt. Lb. per Pkg.	Black: No.	Per 100	Diam. Head In.	Wt. Lb. per Pkg.
⅜″WTB	....	⅜	1⅛	⅜″BTB	....	⅜	1
½″WTB	....	½	1⅝	½″BTB	....	½	1½
⅝″WTB	....	⅝	2½	⅝″BTB	....	⅝	2¼
¾″WTB	....	¾	4½	¾″BTB	....	¾	4

Screw Bumpers

Standard package, 250.

No.	Per 100	Diam. Head In.	Type Screw No.	Type Screw Type	Color	Wt. Lb. per Pkg.
¾″WWSB	....	¾	10	Wood	White	4⅛
⅞″WWSB	....	⅞	10	Wood	White	5¼
1″WWSB	....	1	10	Wood	White	5⅞
1⅛″WWSB	....	1⅛	10	Wood	White	7
¾″BWSB	....	¾	10	Wood	Black	4
⅞″BWSB	....	⅞	10	Wood	Black	5
1″BWSB	....	1	10	Wood	Black	5½
1⅛″BWSB	....	1⅛	10	Wood	Black	7
¾″BMSB	....	¾	8	Mach.	Black	3
1″BMSB	....	1	10	Mach.	Black	5

Lucky Strike Feather Edge Syphon Valve Washers

Made of soft grey stock.

Standard package, 25.

No.	Size In.	Wt. Lb. per Pkg.
1″ FESV	1	¾
1⅛″ FESV	1⅛	1
1¼″ FESV	1¼	1
1⅜″ FESV	1⅜	1¼
1½″ FESV	1½	1¼
1⅝″ FESV	1⅝	1½
1¾″ FESV	1¾	1½
2″ FESV	2	1¾

Lucky Strike Syphon Packers

Made of high grade black synthetic stock.
Standard package, 25.

No.	**1¼″**SP	**1½″**SP	**1⅞″**SP	**1 15/16″**SP	**2⅛″**SP
O.D. in.	2¼	3¼	3¼	3¼	3 3/16
Height in.	11/32	5/16	11/32	5/16	⅜
Pkg. Wt. lb.	1	2	2¼	2	2

Lucky Strike Half Round Tank Washers

Made of high grade black rubber.
Standard package, 25.

No.	**1″** HRTW	**1¼″** HRTW	**1½″** HRTW
O.D. in.	1¾	2⅛	2 7/16
Ht. in.	¼	¼	¼
Pkg. Wt. lb.	¾	1	1

Lucky Strike Flanged Spud Washers

Made of black pliable rubber.

No.	**1″**FS	**1¼″**FS	**1½″**FS	**2″**FS
Size inches	1	1¼	1½	2
Inside Diameter inches	1¼	1 11/16	1⅞	2 5/16
Outside Diameter inches	2	2½	2 11/16	3¼
Thickness inches	½	⅝	⅝	11/16
Standard Package	12	25	25	25
Weight per Package lb.	½	1¼	1½	2

Lucky Strike Reducing Spud Washers

No.	**1″x¾″**RS	**1¼″x1″**RS	**2″x1¼″**RS	**2″x1½″**RS
I.D. inches	1 1/16	1⅜	1⅝	1⅞
O.D. inches	2¼	2 7/16	3⅛	3⅛
Height inches	9/16	⅝	⅝	⅝
Std. Pkg.	12	12	25	25
Pkg. Wt. lb.	¾	¾	2¼	2¼

Lucky Strike Beveled Spud Washers

Made of black pliable stock.

Standard package, 25.

No.	**1¼″**BS	**2″**BS
I.D. in.	1⅝	2¼
O.D. in.	2½	3 1/16
Height in.	7/16	7/16
Pkg. Wt. lb.	1¼	1½

No. 840 Lucky Strike Beveled Tank or Jam Washers

Made of black pliable rubber.

I.D., 2 5/16 inches; O.D., 3 inches; height, ⅜ inch.

Standard package, 25.

No. FTJW Lucky Strike Flanged Tank or Jam Washers

Made of black pliable stock.
I.D., 2¼ inches; O.D., 3 inches; height, 21/32 inch.
Standard package, 25.
Package weight, 1½ lb.

Lucky Strike Ball Cock Shank Washers

Made of black synthetic rubber compound.
Standard package, 25; weight, ½ pound.

Heavy Beveled Type

No.	Type	I.D. In.	O.D. In.	Ht. In.
HBSW	Hvy. Bev.	..	1 11/16	7/16
LBSW	Lt. Bev.	..	1¾	¼
FTSW	Flanged	..	1 11/16	9/32
FFSW	Flat	⅞	1½	⅛

Lucky Strike Flat Tank Valve Washers

Made of black pliable stock.
Standard package, 25.

No.	**1¼″** FTW	**1½″** FTW	**1¾″** FTW	**2″** FTW
I.D. in.	1¼	1½	1¾	2¼
O.D. in.	2½	2¾	3	3⅛
Thick. in.	⅛	⅛	⅛	⅛
Pkg. Wt. lb.	¾	1	1⅛	1¼

Lucky Strike Ball Cock Seat Washers

Solid

Beveled

With Hole

Made of resilient black stock.
Standard package, jar of 100.

Size No.	Per 100	O.D. Inches	Hole Inches	Thickness Inches	Wt. Lb. per Pkg.
50BCSW	....	7/16	None	⅛	¼
51BCSW	....	½	None	⅛	¼
52BCSW	....	9/16	None	⅛	⅜
53BCSW	....	⅝	None	⅛	⅜
54BCSW	....	11/16	None	⅛	½
55BCSW	....	¾	None	⅛	½
56BCSW	....	13/16	None	⅛	¾
57BCSW	....	⅝x½ Bev.	None	⅛	½
60BCSW	....	15x32	3/16	⅛	¼
61BCSW	....	9/16	3/16	⅛	¼
62BCSW	....	⅝	3/16	⅛	⅜
63BCSW	....	11/16	3/16	⅛	⅜
64BCSW	....	¾	3/16	⅛	½
70BCSW	....	15/32	None	⅛	¼
71BCSW	....	17/32	None	⅛	¼
72BCSW	....	19/32	None	⅛	⅜
80BCSW	....	½	3/16	⅛	¼

No. **12**BCSW, Assortment of Above 17 Sizes. . per jar ....
No. **11**BCSW, Assortment of Solid Sizes Only. per jar ....

N-Dur-O Faucet Washers

Beveled or Flat Style

N-DUR-O
FAUCET WASHERS
NEOPRENE COMPOUND
HEAT PROOF
WEAR PROOF

Stands up under the most severe conditions. Continual exposure to steam, hot water and rotative abrasion will not impair sealing power.

Made from neoprene, combining strength and resiliency with resistance to heat, oil and age.

Packed in transparent containers, 50 pieces to the container; weight, 1/4 pound.

No.......	1/4"SM	1/4"R	1/4"LGE	3/8"R	3/8"LGE	1/2"R	5/8"R
O.D....in.	1/2	9/16	19/32	5/8	11/16	3/4	13/16

Handipak of 7 assorted sizes is available.

Black Diamond Flat Faucet Washers

For faucets that require flat washers. Made of a high grade synthetic compound.

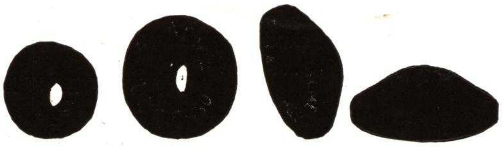
Packed in all metal screw top cans.

Standard package, 100.

BLACK DIAMOND
FLAT
UCET WASHER

No.	Outside Diameter Inches	Package Wt., Lb.
1/4"SM	1/2	1/2
1/4"R	9/16	1/2
1/4"LGE	19/32	5/8
3/8"REG	5/8	3/4
3/8"LGE	11/16	3/4
1/2"R	3/4	1
5/8"R	13/16	1
Handipak—7 Sizes Assorted	...	3/4

Acme Beveled Faucet Washers



Eliminates faucet hum, rapping and chattering. Made of high grade synthetic compound that defies steaming hot water as well as frigid cold water.

Packed 100 washers in a can with screw cover.

No.	Per 100	O.D. Inches	Standard Package	Wt. Lb: per Can
1/4"SM	....	1/2	100	1/2
1/4"R	....	9/16	100	5/8
1/4"LGE	....	19/32	100	3/4
3/8"R	....	5/8	100	1
3/8"LGE	....	11/16	100	1
1/2"R	....	3/4	100	1
1/2"LGE	....	25/32	100	1 1/8
5/8"R	....	13/16	100	1 1/4
3/4"R	....	15/16	100	1 1/4
1"R	....	1 1/32	100	1 1/2

Acme Handipak

ACME Handipak
ASSORTED
FAUCET WASHERS

Packed 100 in can, assorted in 8 practical and useful sizes to assure the right washer for the job at all times.

Weight per can, 1 pound.

Per Can.............

Lucky Strike Flat Washers

For Crane Faucets

Made of black neoprene stock to withstand either hot or cold water. Standard package, 100.

No..................	SCW	MCW	LCW
Diameter......inches	9/16	21/32	3/4
Thickness......inches	5/32	13/64	7/32
Hole..........inches	5/32	13/64	15/64
Pkg. Weight...pounds	1/4	3/8	5/8

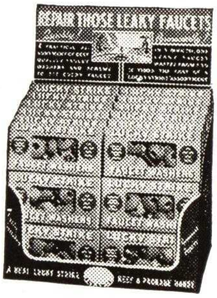
Lucky Strike Double Beveled Washers

For Mueller Faucets

Made of black neoprene stock to withstand either hot or cold water. Hole diameter, 5/32 inch. Std. Pkg., 100.

No..........	SMBW	MMBW	LMBW
Diameter.in.	9/16	11/16	3/4
Thickness in.	11/32	3/8	3/8
Package Wt. ....pounds	3/8	5/8	3/4

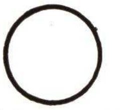
No. 36 Lucky Strike Faucet Washer Assortments



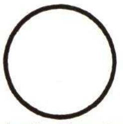
Contains 36 boxes, each containing beveled synthetic compound washers in all popular sizes, with brass screws. Weight of package, 1 3/4 pounds.

Faucet Washer Size Chart

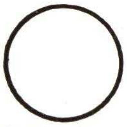
Illustrations Show Actual Diameter and Corresponding Trade Size of All Standard Size Faucet Washers



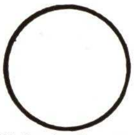
1/4 Inch, Small
1/2 In. O.D.



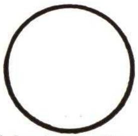
1/4 Inch, Regular
9/16 In. O.D.



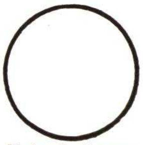
1/4 Inch, Large
19/32 In. O.D.



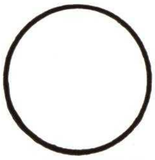
3/8 Inch, Regular
5/8 In. O.D.



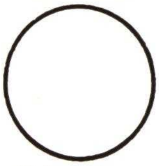
3/8 Inch, Medium
21/32 In. O.D.



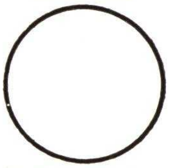
3/8 Inch, Large
11/16 In. O.D.



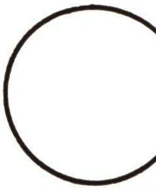
1/2 Inch, Regular
3/4 In. O.D.



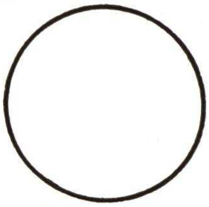
1/2 Inch, Large
25/32 In. O.D.



5/8 Inch, Regular
13/16 In. O.D.



3/4 Inch, Regular
15/16 In. O.D.



1 Inch, Regular
1 1/32 In. O.D.

Lucky Strike Cone-Shaped Faucet Bonnets or Dome Packings

Duck inserted, graphite finish. Standard package, 100.

No.	I.D. In.	O.D. In.	Ht. In.	Wt. Lb. Pkg.
20CDP	3/8	3/4	1/4	3/8
30CDP	13/32	3/4	11/32	1/2
40CDP	11/32	13/16	3/8	3/4

No. CDP, Assortment of 3 Sizes, Weight, 1/2 Pound.

Lucky Strike Mack Gaskets

Made of grey synthetic stock.

Standard package, 25; weight, 1 pound.

No.	Type Gasket	I.D. In.	O.D. In.	Ht. In.
MBG	Basin	1 1/4	2	3/8
MBTG	Bath	1 5/8	2 3/8	3/8

No. OSSG Lucky Strike Old Style Sink Gaskets

Made of grey synthetic stock.

I.D., 1 9/16 inches; O.D., 2 3/4 inches; height, 13/16 inch.

Standard package, 25; weight, 1 1/2 pounds.

No. NSSG Lucky Strike New Style Sink Gaskets

Made of grey synthetic stock.

I.D., 1 3/8 inches; O.D., 2 1/2 inches; height, 3/4 inch.

Standard package, 25; weight, 1 1/2 pounds.

Lucky Strike Waste and Overflow Washers

Tapered Style

Made of black synthetic stock. Standard package, 25.

No.	**1 7/16**"BWW	**1 7/8**"BWW	**2 3/16**"BWW	**2 5/16**"BWW
Size........in.	1 7/16	1 7/8	2 3/16	2 5/16
I.D........in.	1 7/16	1 7/8	2 3/16	2 5/16
O.D........in.	2 7/16	2 15/16	2 13/16	3 1/8
Thickness.in.	1/4x1/8	9/32x1/8	5/32x1/16	5/32x1/16
Weight per Package.lb.	1 1/8	1 3/8	1	1

Lucky Strike Ideal Waste Washers

Made of black synthetic stock.

Standard package, 12.

No.......	1"RWW	1 1/4"RWW	1 1/2"RWW
Pkg. Wt. ....lb.	1/4	1/4	3/8

Lucky Strike Model Waste Washers

Made of black synthetic stock.

Standard package, 12.

No........	1"MW	1 1/4"MW	1 1/2"MW
Wt., Pkg. ..pounds	1/4	3/8	1/2

Lucky Strike Cone Shaped Slip-Joint Washers

No. 1

No. 2

No. 3

No. 4

For lavatory supplies, bath supplies, and ball cock tailpieces. Made of black synthetic tough stock.

Packed 100 in a standard package.

No.	Per 100	I.D. Inches	O.D. Inches	Height Inches	Wt. Lb. per Pkg.
1-CSSJW	....	7/16	5/8	5/16	1/4
2-CSSJW	....	3/8	19/32	3/8	3/8
3-CSSJW	....	3/8	5/8	7/16	1/2
4-CSSJW	....	1/2	3/4	1/4	3/8
5-CSSJW	....	5/8	27/32	1/4	3/8
6-CSSJW	....	7/16	7/8	3/8	7/8
7-CSSJW	....	9/16	7/8	13/32	3/4
8-CSSJW	....	7/16	5/8	15/32	1/2

Lucky Strike Cut Slip-Joint Washers

Extra soft grey stock.

Light Wall

No.	Per 100	Size In.	I.D. In.	O.D. In.	Thick In.	Pieces per Lb.	Std. Pkg.	Wt. Lb. per Pkg.
3/8" LSJW	....	3/8	3/8	17/32	1/8	...	100	1/4
1/2" LSJW	....	1/2	7/16	19/32	3/16	...	100	1/4
9/16" LSJW	....	9/16	17/32	11/16	3/16	...	100	3/8
1 1/4" LSJW	*....	1 1/4	1 1/4	1 3/8	3/16	300	1	1 1/4
1 1/2" LSJW	*....	1 1/2	1 1/2	1 5/8	3/16	250	1	1 1/4
2" LSJW	*....	2	1 3/4	1 7/8	3/16	225	1	1 1/4

Medium Wall

No.	Per Pound	Size In.	I.D. In.	O.D. In.	Thick In.	Pieces per Lb.	Std. Pkg.	Wt. Lb. per Pkg.
1 1/4" MSJW	....	1 1/4	1 1/4	1 7/16	3/16	200	1	1 1/4
1 1/2" MSJW	....	1 1/2	1 1/2	1 11/16	3/16	160	1	1 1/4
2" MSJW	....	2	1 7/8	2 1/16	3/16	125	1	1 1/4

*Per pound.

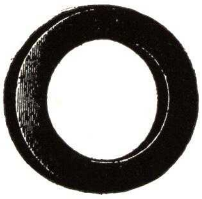
No. 15-SSA Lucky Strike Slip Joint Washer Assortments

THE
No. 15 SLIP JOINT
Washer Assortment
POPULAR SIZES · 100 PIECES
CONTENTS
PRODUCT OF
LAVELLE RUBBER COMPANY
CHICAGO U.S.A.

All popular sizes of cone shaped and cut type slip joint washers.

Packed 12 boxes in standard package; weight of package, 12 pounds.

Lucky Strike Red Rubber Union Washers



For malleable unions.

Made of high grade, red, heat-resisting rubber.

Thickness, 3/32 inch.

Packed 1 pound in a box.

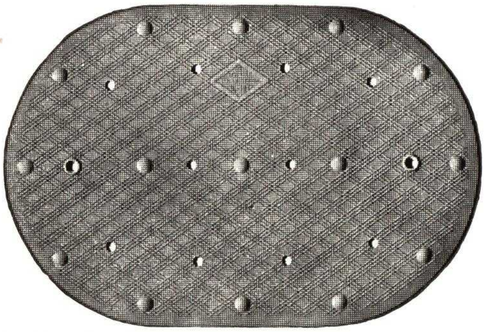
Assortment packed in drawer type partitioned box; weight, 1 pound.

No.	I.D. In.	O.D. In.	Pieces per Pound	No.	I.D. In.	O.D. In.	Pieces per Pound
1/8″UW	15/32	25/32	400	**1**″UW	1 7/16	1 13/16	110
1/4″UW	1/2	29/32	350	**1 1/4**″UW	1 9/16	2 5/32	90
3/8″UW	5/8	1 3/32	250	**1 1/2**″UW	1 13/16	2 7/16	70
1/2″UW	3/4	1 17/64	180	**2**″UW	2 5/16	3 3/32	45
3/4″UW	31/32	1 17/32	135	**2 1/2**″UW	2 3/4	3 9/16	35

No. **4**UWA Assortment—6 Sizes of Washers.

No. SBTM Security Bath Tub Mats

Suction Type



Made of a soft grade of rubber.

In the comfortable non-skid surface of this mat are tub-clinging vacuum cups that assure firm footing at all times.

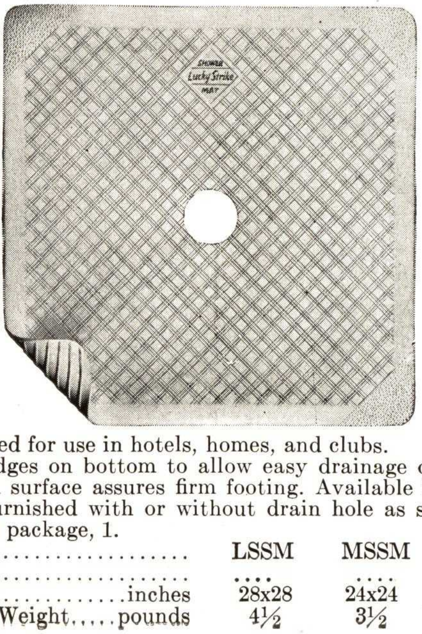
Size, 16x24 inches.

Available in white, green or blue.

Standard package, 1; weight, 2 pounds.

No. SBTM.......................................each .. .

Lucky Strike Shower Stall Mats

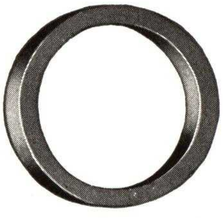


Designed for use in hotels, homes, and clubs.

Has ridges on bottom to allow easy drainage of water. Anti-skid surface assures firm footing. Available in white only. Furnished with or without drain hole as specified. Standard package, 1.

No.	LSSM	MSSM	SSSM
Each	....	....	....
Size.................inches	28x28	24x24	18x18
Package Weight.....pounds	4 1/2	3 1/2	1 1/2

Lucky Strike Trap Washers

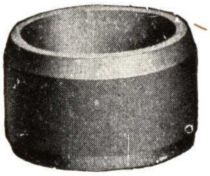


Standard package, 100.

No.	I.D. In.	O.D. In.	Thick In.	Pkg. Wt. Lb.
	Red Rubber			
1 1/4″RTW	1 1/8	1 5/16	3/32	1/4
1 1/2″RTW	1 3/8	1 9/16	3/32	3/8
	Red Fiber			
1 1/4″FTW	1 9/32	1 1/2	1/16	1/4
1 1/2″FTW	1 17/32	1 3/4	1/16	1/4

No. 1400

Test Plug Rubbers



Size. In.	2	3	4	5	6
Each...	**$.36**	**1.00**	**1.44**	**1.60**	**1.90**

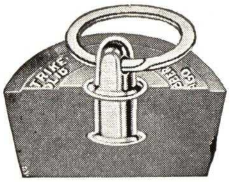
Lucky Strike Solid Basin Plugs

For Lavatory, Bath, and Laundry Tubs

Made of white rubber. Withstands the action of hot and soapy water. Will not pop out of P. O. plug because it cannot swell.

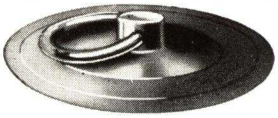
With heavy, nickel-plated post and ring molded in rubber.

Standard package, 12.



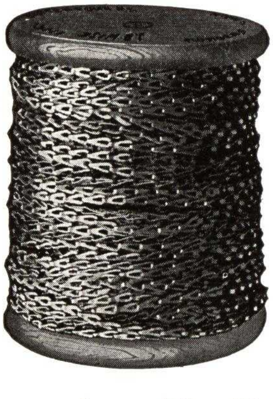
No.	Size Inches	Wt. Lb. per Doz.
1″ SBP	1	3/4
1 1/8″ SBP	1 1/8	3/4
1 1/4″ SBP	1 1/4	7/8
1 3/8″ SBP	1 3/8	7/8
1 1/2″ SBP	1 1/2	1
1 5/8″ SBP	1 5/8	1 1/4
1 3/4″ SBP	1 3/4	1 1/2
2″ SBP	2	1 3/4

Special Rubber Stoppers



No....................................	**8609**	**8608**	**8617**
Size....................................	Lav.	Bath	Sink
Per Dozen....................................	.....	.....	.....

Plumbers' Brass Link Chain



On Reels

Packed on reels of 250 and 500 feet.

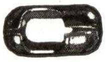
Chain No.........	**00**	**0**
Nickel-Plated .....per 100 ft.	.....	.....
Chromium-Plated .....per 100 ft.	.....	.....

In Boxes

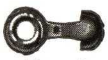
Packed 36 feet in each box.

Chain No..........	**00**	**0**
Nickel-Plated ....per box	.....	.....
Chromium-Plated ....per box	.....	.....

Jump Ring Bead Chain Couplings



Type B



Type A

	Nickel Plated	**Chromium Plated**
Type B Coupling......................per 100	....	....
Type A Coupling......................per 100	....	....

Wrought Brass Sure Grip Flanges

Deep Pattern

Packed 100 in a box.

No.	1114	1115
Nickel-Plated per 100	.....	.....
Chromium-Plated per 100	.....	.....
O. D. in.	3	3
For O. D. Tube in.	1¼	1½

No. 216 Sure-Grip Wrought Brass Flanges

Made of 24 B. & S. gage brass. Diameter at base, 2½ inches. Height, 11/16 inch.

I.P.S. Piercing inches	⅜	½
O.D. Piercing inches	*	½
No. **216**, N.P. each	....	....
No. **216**, C.P. each	....	....

*This size not made.

No. 220 Sure-Grip Wrought Brass Flanges

Made of 24 B. & S. gage brass. Diameter at base, 3 inches. Height, 11/16 inch.

I.P.S. Piercing in.	¾	*	*	*
O.D. Piercing in.	*	1⅜	1¼	1½
No. **220**, N.P. ea.	...	...	...	...
No. **220**, C.P. ea.	...	...	...	...

*These sizes not made.

No. 222 Sure Grip Wrought Brass Flanges

Made of 22 B.& S. gage brass; diameter at base, 3 inches. Height, 11/16 inch.

I.P.S. inches	¾	1
No. **222**, N.P. each	....	....
No. **222**, C.P. each	....	....

No. 224 Sure-Grip Wrought Brass Flanges

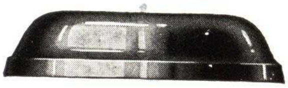
Made of 24 B. & S. gage brass.

Diameter at base, 3½ inches.

Height, ¾ inch.

I.P.S. in.	1¼	1½
No. **224**, N.P. ea.	....	....
No. **224**, C.P. ea.	....	....

No. 230 Wrought Brass Closet Spud Flanges



Plain Piercing

Diameter at base, 3½ inches; height, ¾ inch.

*This size not made.

I.P.S. Piercing inches	1½	2	*
O.D. Piercing inches	*	2	2½
No. **230**, Nickel-Plated each	....	....	....
No. **230**, Chromium-Plated each	....	....	....

No. 238 Sure Grip Wrought Brass Flanges

Deep Pattern

Size in.	⅜ I.P.S.	½ I.P.S.	½ O.D.	9/16 O.D.
N. P. ea.	....	....	....	....
C. P. ea.	....	....	....	....
Diam. in.	2⅜	2⅜	2⅜	2⅜
Height in.	1¼	1¼	1¼	1¼

No. 242 Sure Grip Wrought Brass Flanges

For Tubing inches	1¼	1½
No. **242**, N. P. each	....	....
No. **242**, C. P. each	....	....
Diameter inches	3	3
Height inches	1½	1½

Quaturn Quick Compression Parts

Quaturn Parts are standardized; one working unit fits all Quaturn bath faucets, lavatory faucets, sink faucets, and Bibbs.

Brass Stems

No. **1–17**, Hdle. Screw... ea.	**$.023**
No. **1–19**, Conical Packing Washer. ea.	**.046**
No. **1–20**, Brass Packing Washer. ea.	**.012**
No. **1–16**, L.H. Stem... ea.	**.345**
No. **1–15**, R.H. Stem... ea.	**.345**

Complete Units

No. **1–100**, L.H... ea.	**$.863**
No. **1–99**, R.H... ea.	**.863**

Brass Sleeves

No. **1–28**, L.H.... ea.	**$.288**
No. **1–29**, R.H.... ea.	**.288**

No. 1-27 Monel Seats

No. **1–27**.. ea. **$.046**

No. 1-21 Seat Washers

No. **1–21**, ... ea. **$.035**

No. 1-22 Monel Washer Retainers

No. **1–22**........ each **$.046**

No. 1-14 Brass Caps

Size 1¼ inches. Chromium-plated.

No. **1–14**........ each **$.288**

No. 1-31 Stem Nut Washers

No. **1–31**........ each **$.012**

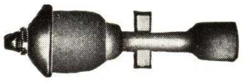
No. 1-18 Monel Stem Nuts

No. **1–18**........ each **$.046**

No. 93 Fuller Eccentrics

Size of Bibb inches	½	¾
Price, Finished or Nickel-Plated each	....	....

No. 94 Fuller Stems with Ball



Size of Faucet inches	½	¾
Price each	....	....

No. 105 Fuller Adjustable Stems

Size of Bibb inches	½	¾
Price, with Ball each	**$.40**	**.45**

These stems fit any style or size of Fuller bibb.

Fuller Repairs

Cap

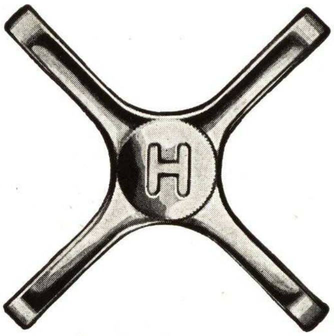
Stem Packing

Stem Nut

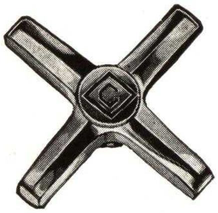
	Price, per Dozen		
Size Inches	No. **97** Cap	No. **98** Stem Nut	No. **99** Screw
½	**$.40**	**$.30**	**$.25**
¾	**.60**	**.40**	**.25**

	No. **103** Stem Packings		
Size Inches	Comp.	Lead	Brass
½	**$.75**	**$.30**	**$.50**
¾	**.75**	**.30**	**.50**

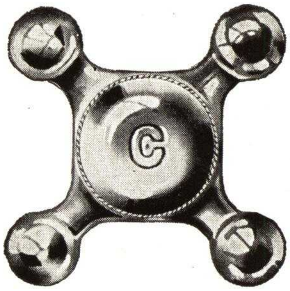
McDonald Handles



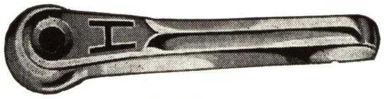
No. E-614
2⅞-Inch Metropolitan Cross Handle



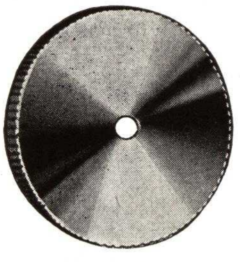
Diamond Cross Handle
No. E-616—2⅝-Inch
No. E-617—3-Inch



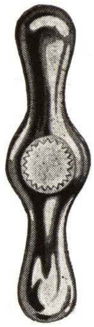
No. E-606
Four Ball Indexed Handle



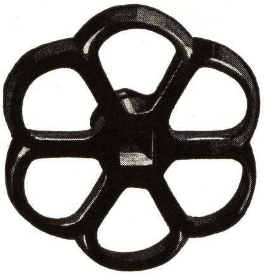
No. E-608
Diamond Lever Handle



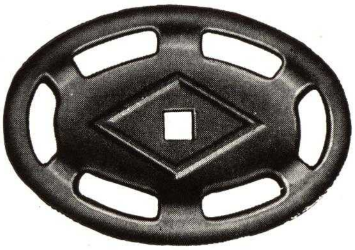
No. E-601
Bronze Wheel Handle



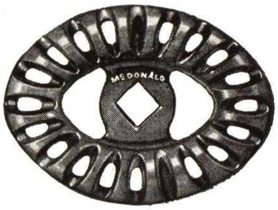
No. E-600
Bronze Tee Handle



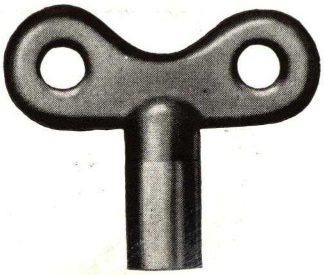
No. E-601½
Bronze Wheel Handle
For Lawn Faucets



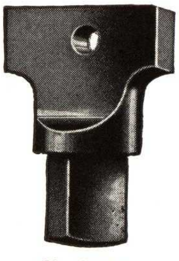
Oval Wheel Handle
No. E-602½—For ⅜, ½, ⅝, and ¾-Inch Stops
No. E-602—For 1-Inch Stops (Not Illustrated)



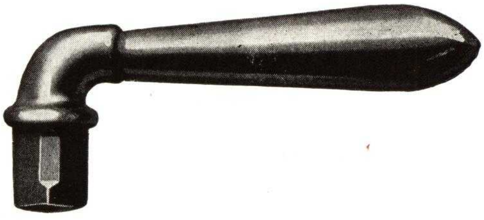
No. E-620
Oval Wheel Handle



No. E-621
Bronze Loose Key
Tee Handle

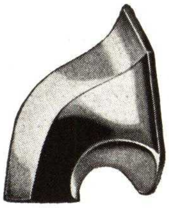


No. E-618
Malleable Iron Galvanized
Tee Handle
For Stops and Stop and Drain

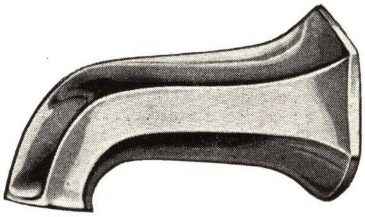


No. E-619
Malleable Iron Painted
Lever Handle
For Stops and Stop and Drain

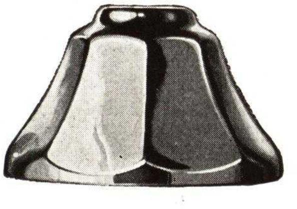
McDonald Concealed Fitting Parts



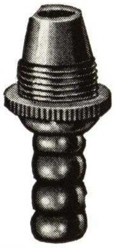
No. E-633-A
Tub Supply Spout
¾-Inch Female
Diamond Line



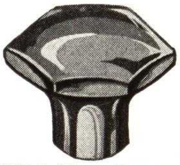
No. E-631-A
Over Rim Bath Spout
¾-Inch Female
Art Design



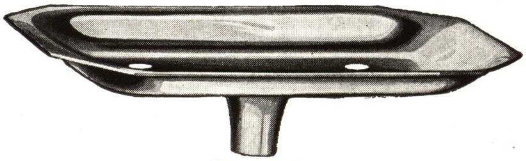
Escutcheon
No. E-636-AB, for Bath Fittings
No. E-636-AL, for Lavatory Fittings
Art Design



Hose Connection
No. E-634, for Bath Faucet
No. E-634, for Bath Fitting Spout



No. E-645-A Metal Pop-Up Knob
Art Design



No. E-656
Metal Soap Dish

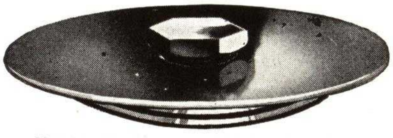
McDonald Drum Trap Covers

Cast Bronze

3-Inch Iron Pipe Size Thread
4⅝-Inch and 5¼-Inch Outside Flange Diameter

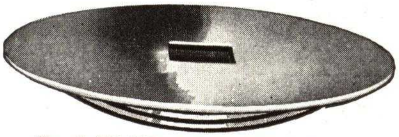
Specify outside flange diameter desired.

Heavy Nut Pattern



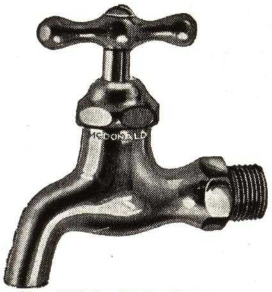
No. E-660-NP —Polished Nickel
No. E-660-CP —Polished Chromium
No. E-660-M —Machine Finish
No. E-660-R —Rough Bronze
No. E-660-DNP—Die Cast Nickel
No. E-660-DCP—Die Cast Chromium

Countersunk Head Pattern

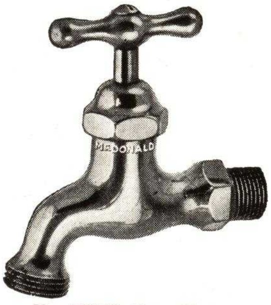


No. E-662-NP—Polished Nickel
No. E-662-CP—Polished Chromium
No. E-622-M —Machine Finish
No. E-662-R —Rough Bronze

Diamond Line Compression Faucets



No. E3241, Plain End



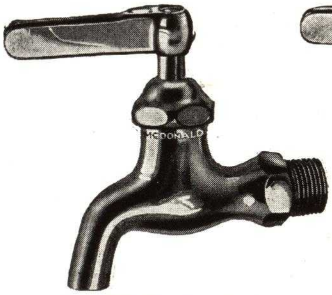
No. E3242, Hose End

Compression faucet with tee handle.

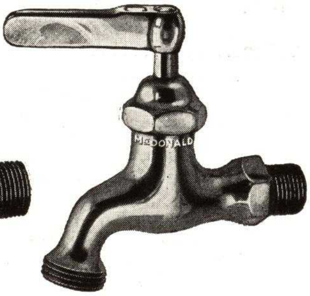
	No. E3241, Plain End					No. E3242, Hose End			
Size....in.	⅜	½	⅝x¾	¾	1	½	⅝x¾	¾	1
Rough.ea.	....	....	....	....	....	....	....	....	....
Fin....ea.	....	....	....	....	....	....	....	....	....
N.P....ea.	....	....	....	....	....	....	....	....	....
C.P....ea.	....	....	....	....	....	....	....	....	....

McDonald Compression Faucets

Diamond Line



No. E-3361, Plain End



No. E-3362, Hose End

Diamond Line compression faucet with metal lever handle.

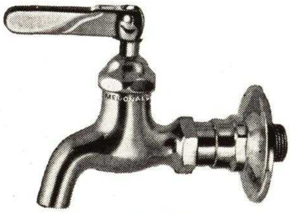
Sizes, ⅜, ½, ⅝x¾, ¾ and 1 inch. No. E-3362 not available in ⅜-inch size.

Furnished with either nickel-plated or chromium-plated finish.

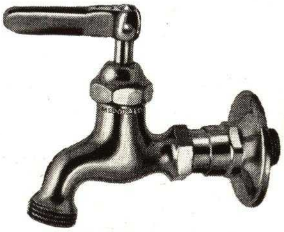
No. E-3361, iron pipe, with plain end.
No. E-3362, iron pipe, with hose end.

McDonald Compression Faucets

Diamond Line



No. E-3373, Plain End



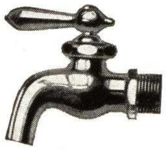
No. E-3374, Hose End

Diamond Line compression faucet with adjustable flange with hexagon, and metal lever handle.

Sizes, ½ and ⅝x¾ inch. Furnished with either nickel-plated or chromium-plated finish.

No. E-3373, with plain end.
No. E-3374, with hose end.

Chicago Quaturn Single Sink Faucets



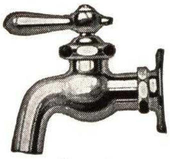
No. 4

Short pattern; ½-inch male, with shoulder.
Chromium plated.

	With Plain Spout		With Hose Thread on Spout	
I.P. Size...............inches	½	¾	½	¾
No.	4	6	5	7
Each	.....	.....	.....	.....

Can be supplied with Klo-Self (self-closing) unit with lever or four-arm handle at extra cost.

Chicago Quaturn Single Sink Faucets



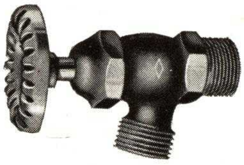
No. 12

Short pattern; ½-inch female, with solid flange.
Chromium plated.

	With Plain Spout		With Hose Thread on Spout	
I.P. Size..................inches	½	¾	½	¾
No.	12	13	14	15

Can be supplied with Klo-Self (self-closing) unit with lever or four-arm handle at extra cost.

McDonald Compression Sediment Faucets



No. E-3594

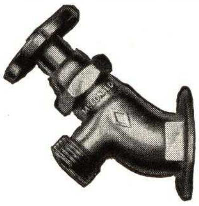
A full size water-way faucet with ¾-inch hose thread on nozzle. Male iron pipe inlet.

Available in ½ and ¾-inch sizes.

No. E-3594, with iron oval wheel handle.

No. E-3593, with tee handle.

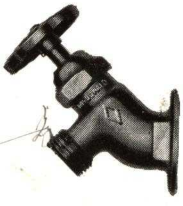
Rough nickel plated brass.



No. 3614 McDonald Lawn Faucets

Nickel-plated rough brass angle pattern lawn faucet with brass wheel key handle. By removing screws fastening handle to stem, faucet is converted into a loose key lawn faucet.

Size...........inches	½	¾
No. 3614.........each	$1.50	1.50



No. E-3615 McDonald Lawn Faucets

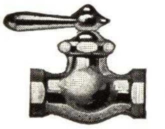
Angle Pattern

Large Water Ways

Nickel-plated rough brass angle pattern lawn faucet with brass wheel handle.

Furnished in ½ and ¾-inch sizes.

Chicago Quaturn Straightway Stops



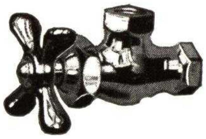
Female iron pipe thread both ends, metal lever handle.

Chromium plated.

I.P. Size............inches	½	⅜	¾
No.	45	376	375
Each	...	...	...

Available, at extra cost, with metal cross handle. Furnished also with Klo-Self (self-closing) unit.

No. 442 Chicago Quaturn Angle Stops

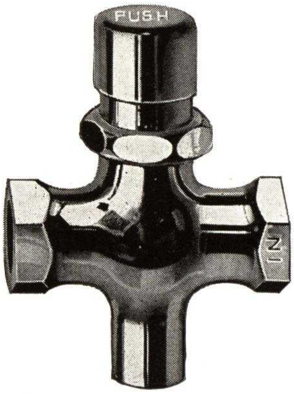


Female iron pipe thread in both inlet and outlet, four-arm metal handle.

Chromium plated.

I.P. Size........inches	⅜	½
No. 442...........each	.....	.....

No. 339 Chicago Naiad Type Self-Closing Straightway Stops



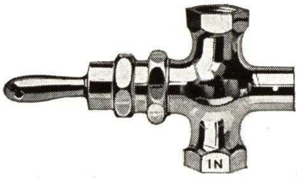
Push button operated.

Female iron pipe thread on both ends.

Chromium plated.

I.P. Size..inches	⅜	½
No. 339.....each	....	....
For Oscillating Handle Add......each	....	....

No. 386 Chicago Naiad Type Self-Closing Straightway Stops

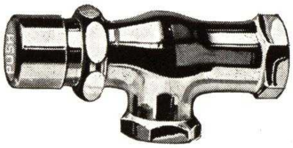


Has oscillating handle. I.P. thread, female, on both ends.

Chromium plated.

I.P. Size..inches	⅜	½
No. 386.....each	....	....

No. 389 Chicago Naiad Type Self-Closing Angle Stops



Push button operated.
Female iron pipe thread in both inlet and outlet.
Chromium plated.

I.P. Size..inches	⅜	½
No. 389.....each	....	....
For Oscillating Handle, Add..............each	....	....

WHEN ORDERING *please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.*

McDonald Compression Stops

Straight

A brass compression stop with stuffing box. For iron pipe.

Available in 3/8 and 1/2-inch sizes.

Specify whether nickel plated or chromium plated finish is desired.

Angle

Straight

No. E-3586—Diamond line.
No. E-3584—Metropolitan handle.

Angle

No. E-3587—Diamond line.
No. E-3585—Metropolitan handle.

McDonald Compression Stops and Stops and Drains

No. 3509 Stops and Drains
No. 3510 Stops

No. E-3509

No. E-3510

Rough bronze stop with iron wheel handle, dome cap, and without stuffing box. Full size waterway.

The 1/2 and 5/8-inch sizes have oval wheel handle, other sizes have round wheel handle.

Sizes, 3/8, 1/2, 5/8, and 1-inch I.P.T.

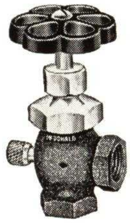
McDonald Compression Stops and Drains

No. E-3511
Straight

Rough bronze stop and drain with iron wheel handle, and stuffing box.

Full size waterway.

The 1/2 and 5/8-inch sizes have oval wheel handle, other sizes have round wheel.


No. E-3515
Angle

No. E-3511, Straight. Sizes, 3/8, 1/2, 5/8, 3/4 and 1 inch I.P.T.

No. E-3515, Angle. Sizes, 1/2-inch or 1/2-inch side outlet, 3/4-inch bottom outlet.

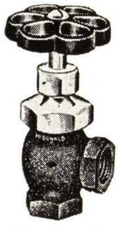
McDonald Compression Stops

No. E-3513, Straight,

Rough bronze stop with iron wheel handle and stuffing box.

Full size waterway.

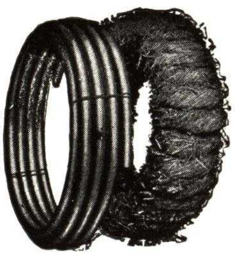
The 1/2 and 5/8-inch sizes have oval wheel handle, other sizes have round wheel handle.


No. E-3514, Angle

No. E-3513, Straight. Sizes, 3/8, 1/2, 5/8, 3/4 and 1 inch I. P. T.

No. E-3514, Angle. Sizes, 3/8, 1/2 and 3/4 inch.

Lead Pipe



STRONG. Wall thickness will safely withstand a constant cold water pressure of 50 pounds per square inch. Shipped in coils unprotected unless otherwise specified.

EXTRA STRONG. Wall thickness will safely withstand a constant cold water pressure of 75 pounds per square inch. Shipped in coils unprotected unless otherwise specified.

EXTRA LIGHT AND LIGHT. In coils wrapped in excelsior pads.

	Extra Light Class D		Light Class C		Strong Class A		Extra Strong Class AA	
I.D. In.	Lgth. Coil Ft.	Wt.Lb. per Ft.	Lgth. Coil Ft.	Wt.Lb. per Ft.	Lgth. Coil Ft.	Wt.Lb. per Ft.	Lgth. Coil Ft.	Wt.Lb. per Ft.
3/8	160	5/8	134	3/4	133	1 1/2	100	2
1/2	134	3/4	100	1	133	1 1/2	100	2
5/8	100	1	67	1 1/2	80	2 1/2	67	3
3/4	80	1 1/4	57	1 3/4	67	3	57	3 1/2
1	50	2	40	2 1/2	50	4	42	4 3/4
1 1/4	40	2 1/2	34	3	42	4 3/4	34	6
1 1/2	28	3 1/2	24	4 1/4	33	6 1/2	25	8
1 3/4	10	4	25	5	38	6 3/4	24	10 1/2
2	10	4 3/4	10	6	35	8 3/4	21	13 3/4

Lead Waste Pipe

I.D. Inches	O.D. Inches	Length Pipe Feet	Weight Pounds per Foot
2 1/2	2.75	10	5
2 1/2	3.00	10	10 5/8
3	3.25	10	6
3	3.50	10	12 1/2
4	4.25	10	7 7/8
4	4.50	10	16 3/8
5	5.25	10	9 7/8
5	5.50	10	20 1/4
6	6.25	10	11 13/16
6	6.50	10	24 1/8

Block Tin Pipe

Diam., In.		Wt.	Diam. In.		Wt.	Diam. In.		Wt.	Diam In.		Wt.
Inside	Outside	per Ft. Oz.	Inside	Outside	per Ft. Oz.	Inside	Outside	per Ft. Oz.	Inside	Outside	per Ft Oz.
1/16	1/8	1/2	5/16	9/16	8	1/2	†19/32	4 1/2	3/4	*29/32	10
1/8	3/16	3/4	3/8	1/2	4	1/2	5/8	5	3/4	*29/32	11
3/16	1/4	1 1/2	3/8	*1/2	4 1/2	1/2	*5/8	5 1/2	3/4	15/16	12
3/15	5/16	2 1/2	3/8	17/32	5	1/2	21/32	6	3/4	†1	16
1/4	3/8	3	3/8	†9/16	6	1/2	*21/32	7	3/4	1 1/32	17
1/4	13/32	4	3/8	*9/16	7	1/2	11/16	8	3/4	1 1/16	20
1/4	7/16	5	3/8	19/32	8	1/2	23/32	10	1	1 1/8	9
1/4	*7/16	6	3/8	†5/8	9	1/2	3/4	12	1	1 3/16	14
1/4	†1/2	7	3/8	*5/8	10	5/8	24/32	8	1	*1 3/16	15
1/4	*1/2	8	3/8	21/32	12	5/8	25/32	9	1	1 7/32	18
5/16	*7/16	4	7/16	†9/16	4	5/8	13/16	10	1	1 1/4	20
5/16	†1/2	5 1/2	7/16	19/32	6	5/8	7/8	14	1	1 5/16	22
5/16	17/32	7 1/2	7/16	5/8	8	3/4	*7/8	8	...	...	..

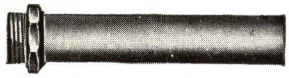
*Full. †Scant.

Put up in coils approximately 25 and 50 pounds and on reels approximately 225 pounds.

No. 7 Combination Soldering Nipples

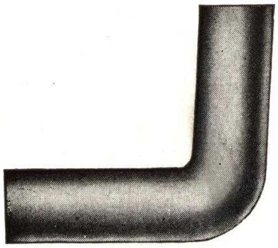
Lead and Brass—Standard Weight

Straight Combination Soldering Nipples

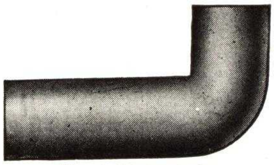


Size Inches	Price, Each — Length, Inches 4	5	6	8	10	12	14
1 1/4	$.39	$.42	$.44	$.52	$.58	$.63	$.73
1 1/2	.48	.55	.60	.66	.74	.80	.93
2	.72	.81	.86	.96	1.08	1.17	1.37
	16	18	20	24	30	36	......
1 1/4	$.78	$.83	$.90	$1.00	$1.20	$1.30	....
1 1/2	1.00	1.07	1.15	1.30	1.48	1.65	....
2	1.47	1.56	1.68	1.87	2.27	2.58	....

Lead Bends



No. 1 Long Inlet



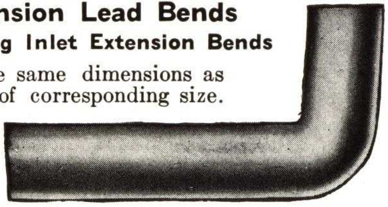
No. 2 Short Inlet

Size In.	Weight per Ft. Pounds	Center to End, In. Inlet No. 1	Center to End, In. Inlet No. 2	Center to End, In. Outlet Nos. 1-2	Weight	Each No. 1	Each No. 2
1½	2¼	7	4	7	Standard	$.50	$.38
2	3¼	7¾	3¾	7¾	Standard	.78	.57
3	5	8¼	4¼	8¼	Standard	1.39	1.09
4	6	10	5½	10	Standard	1.95	1.50
1¼	2	6	3½	6	Medium	.41	.31
1½	3	7	4	7	Medium	.66	.51
2	4	7¾	3¾	7¾	Medium	1.00	.69
1¼	2½	6	3½	6	Ex. Hy.	.50	.34
1½	3½	7	4	7	Ex. Hy.	.79	.62
2	4½	7¾	3¾	7¾	Ex. Hy.	1.05	.80
3	6	8¼	4¼	8¼	Ex. Hy.	1.60	1.21
4	8	10	5½	10	Ex. Hy.	2.40	1.84

Extension Lead Bends

No. 3 Long Inlet Extension Bends

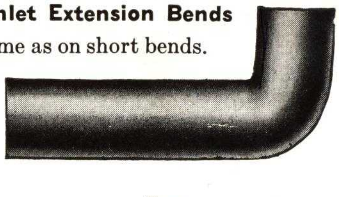
Long inlet ends are same dimensions as inlets on long bends of corresponding size.



Size Inches	Weight per Foot Pounds	Weight	Each With Outlet 12-in.	15-in.	18-in.	20-in.	Each *Extra In.
1½	2¼	Standard	$.67	$.77	$.88	$.95	$.04½
2	3¼	Standard	.99	1.14	1.29	1.39	.06¼
3	5	Standard	1.73	1.99	2.24	2.42	.10¾
4	6	Standard	2.15	2.44	2.73	2.92	.12
1¼	2	Medium	.60	.70	.80	.87	.04¼
1½	3	Medium	.89	1.03	1.17	1.26	.06
2	4	Medium	1.24	1.42	1.61	1.74	.07¾
1¼	2½	Ex. Hy.	.70	.82	.94	1.02	.05
1½	3½	Ex. Hy.	1.07	1.24	1.41	1.52	.07
2	4½	Ex. Hy.	1.35	1.56	1.76	1.90	.08½
3	6	Ex. Hy.	1.96	2.25	2.54	2.74	.12
4	8	Ex. Hy.	2.62	2.98	3.34	3.58	.15

No. 4 Short Inlet Extension Bends

Short inlet ends are the same as on short bends.

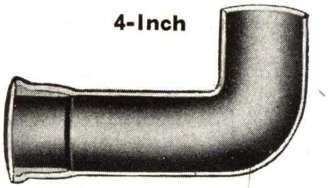


Size Inches	Weight per Foot Pounds	Weight	Each With Outlet 12-in.	15-in.	18-in.	20-in.	Each *Extra In.
1½	2¼	Standard	$.56	$.67	$.77	$.84	$.04½
2	3¼	Standard	.79	.94	1.09	1.19	.06¼
3	5	Standard	1.39	1.65	1.90	2.07	.10¾
4	6	Standard	1.70	2.00	2.30	2.48	.12
1¼	2	Medium	.52	.62	.72	.79	.04¼
1½	3	Medium	.75	.89	1.03	1.12	.06
2	4	Medium	.99	1.17	1.36	1.49	.07¾
1¼	2½	Ex. Hy.	.60	.72	.84	.92	.05
1½	3½	Ex. Hy.	.90	1.07	1.24	1.35	.07
2	4½	Ex. Hy.	1.08	1.28	1.49	1.63	.08½
3	6	Ex. Hy.	1.57	1.87	2.16	2.35	.12
4	8	Ex. Hy.	2.09	2.45	2.81	3.04	.15

*Add per inch to list of nearest listed size for excess length.

No. 5 Combination Lead Bends and Ferrules

4-Inch



Lgth. In.	Standard Short Inlet Each	Standard Long Inlet Each	Extra Heavy Short Inlet Each	Extra Heavy Long Inlet Each	Lgth. In.	Standard Short Inlet Each	Standard Long Inlet Each	Extra Heavy Short Inlet Each	Extra Heavy Long Inlet Each
12	$2.20	$2.65	$2.59	$3.12	17	$2.70	$3.14	$3.19	$3.72
13	2.30	2.75	2.71	3.24	18	2.80	3.23	3.31	3.84
14	2.40	2.85	2.83	3.36	19	2.90	3.33	3.43	3.96
15	2.50	2.94	2.95	3.48	20	3.00	3.42	3.54	4.08
16	2.60	3.04	3.07	3.60	..	....	....	....	....

Short inlet is 5½ inches, long 9¾ inches.

No. 6 Combination Ferrules

Lead and Iron—Standard Weight

Lgth. In.	Price, Each 1¼-in. for 2-in. C.I. Pipe	1½-in. for 2-in. C.I. Pipe	2-in. for 2-in. C.I. Pipe	3-in. for 3-in. C.I. Pipe	4-in. for 4-in. C.I. Pipe
4	....	....	$.28	$.42	$.50
4½	$.28	$.28	....	....	....
5	.36	.36	.41	.60	.72
6	.43	.43	.46	.67	.85
8	.51	.51	.57	.82	1.02
10	.60	.60	.67	.98	1.25
12	.67	.67	.76	1.10	1.40
14	....	.80	.80	1.15	1.60
16	....	.90	.86	1.22	1.73
18	....	1.00	.92	1.30	1.85
20	....	1.10	1.00	1.40	2.10
24	....	1.30	1.15	1.60	2.30
30	....	....	1.40	2.00	2.75
36	....	....	1.65	2.30	3.25

No. 1 Lead Drum Traps

With Brass Trap Screw, Ordinary Finish

Furnished with flat bottoms if desired.

Size In.	Each Standard	Each Medium	Each Extra Heavy	Add for Pol. or C.P. Trap Cover
4x 8	$1.90	$2.05	$2.40	$.20
4x 9	2.02	2.18	2.50	.20
4x10	2.10	2.27	2.63	.20
4x11	2.18	2.37	2.75	.20
4x12	2.25	2.45	2.90	.20
4x14	2.55	2.75	3.30	.20
5x10	3.00	....	3.40	.20
5x11	3.15	....	3.55	.20
5x12	3.30	....	3.70	.20
6x10	3.55	....	4.15	.20
6x11	3.75	....	4.35	.20
6x12	3.90	....	4.60	.20

Traps with side screw covers are also available.

No. 5 Lead Drum Traps

With Nickel-Plated Trap Screw

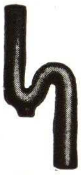
Outside diameter of cap, 4½ inches.

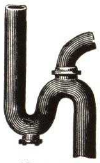
Size In.	Price, Each Std. Wt.	Price, Each Ex. Hvy. Weight	Size In.	Price, Each Std. Wt.	Price, Each Ex. Hvy. Weight
4x 8	$2.20	$2.70	6x10	$3.85	$4.45
4x 9	2.32	2.80	6x11	4.05	4.65
4x10	2.40	2.93	6x12	4.20	4.90

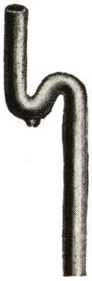
No. 45 Lead Plain Running Traps

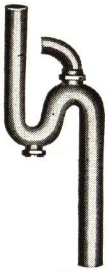
	Plain			Vented		
Size............inches	1¼	1½	2	1¼	1½	2
Standard.........each	...	$.72	$1.13	....	$1.67	$2.08
Extra Heavy.....each	$.70	1.03	1.46	$1.50	1.98	2.41

Lead S Traps


No. 30
Regular
Plain


No. 48
Regular
Vented


No. 1
Long Outlet
Plain


No. 7
Long Outlet
Vented

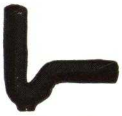
Standard

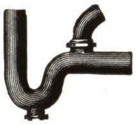
Size Inches	Regular, Each Plain	Regular, Each Vented	Long Outlet, Each Plain	Long Outlet, Each Vented	Wt. Lbs. per Ft.
1½	$.90	$1.85	$1.36	$2.31	2¼
2	1.38	2.33	2.00	2.95	3¼

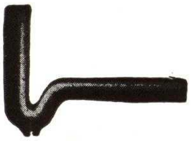
Extra Heavy

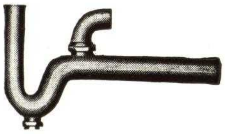
Size Inches	Regular, Each Plain	Regular, Each Vented	Long Outlet, Each Plain	Long Outlet, Each Vented	Wt. Lbs. per Ft.
1¼	$.87	$1.67	$1.44	$2.24	2½
1½	1.25	2.20	1.95	2.90	3½
2	1.85	2.80	2.69	3.64	4½

Lead P Traps


No. 40
Regular Plain


No. 50
Regular Vented


No. 4
Long Outlet Plain

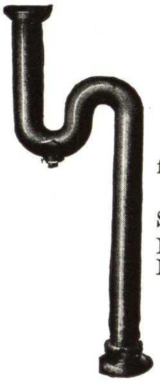

No. 10
Long Outlet Vented

Size Inches	Weight per Foot Pounds	Standard, Each			
		Regular		Long Outlet	
		Plain	Vented	Plain	Vented
1½	2¼	$.75	$1.70	$1.02	$1.97
2	3¼	1.20	2.15	1.55	2.50

Size Inches	Weight per Foot Pounds	Extra Heavy, Each			
		Regular		Long Outlet	
		Plain	Vented	Plain	Vented
1¼	2½	$.77	$1.57	$1.14	$1.94
1½	3½	1.09	2.04	1.50	2.45
2	4½	1.57	2.52	2.02	2.97

No. 4000 Diamond Cast Iron Long S Traps

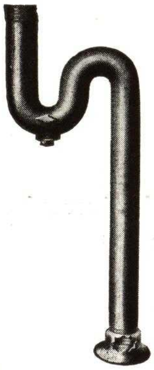
With Sink Collar



Length over all, 2 feet, with the floor flange allowing an adjustment of one inch.

Size	inches	1¼	1½
No. 4000, Painted	each	$1.50	$2.00
No. 4000, Galvanized	each	2.25	2.90

Diamond Cast Iron Long S Traps



These traps are two feet long over all, with the floor flange allowing an adjustment of one inch.

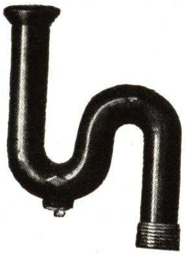
No. 4004 for Iron Pipe

Size	inches	1¼	1½
Painted	each	$1.50	$2.00
Galv.	each	2.25	2.90

No. 4004C With Slip Joint Nut

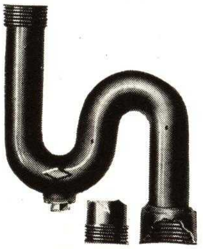
Size	inches	1¼	1½
Painted	each	$1.75	$2.30
Galv.	each	2.50	3.20

No. 4024 McDonald Diamond Cast Iron Short S Traps



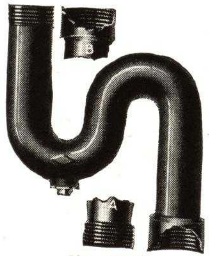
Threaded for iron pipe at outlet. Sink collar can be slipped over trap, engaging the bell end at top for fastening to sink. Fitted with brass clean-out plug.
Painted or galvanized.
Sizes: 1¼ and 1½ inches.

McDonald Diamond Cast Iron Short S Traps


No. 4032

Threaded for iron pipe.
No. 4032. Male inlet and female outlet.
No. 4032-A. Male inlet and outlet.
Fitted with brass clean-out plug.
Painted or galvanized.
Sizes: 1¼ and 1½ inches.

McDonald Diamond Cast Iron Short S Traps

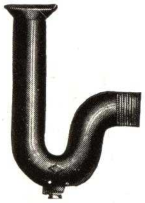


No. 4048

Threaded for iron pipe.
No. 4048. Male inlet and female outlet.
No. 4048-A. Male inlet and outlet.
No. 4048-B. Female inlet and outlet.
Fitted with brass clean-out plug.
Painted or galvanized. Size, 2 inches.

No. 4056 Diamond Universal Cast Iron P Traps

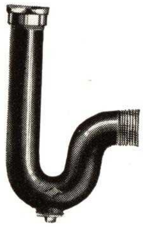
With Sink Collar



This trap has a brass clean-out screw and is threaded for iron pipe. The use of a tee on outlet end provides vent if desired.

Size . . . . .inches	1¼	1½
Price, Painted . . . . .each	$.75	$1.00
" Galvanized . . . . "	1.15	1.50

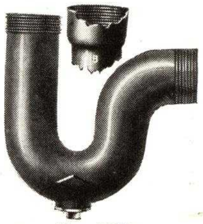
No. 4072 McDonald Diamond Universal Cast Iron Half-S or P Traps



Threaded for iron pipe. Has male outlet and nickel plated slip joint nut inlet which fits waste tubes of sinks, etc. Slip joint nut on 1¼-inch trap fits 1¼-inch waste tube; on 1½-inch trap fits 1½ or 1¼-inch waste tube as ordered. Fitted with brass clean-out plug.

Painted or galvanized. Sizes: 1¼ and 1½ inches.

McDonald Diamond Cast Iron Half-S or P Traps



No. 4096

Threaded for iron pipe.

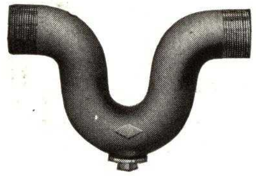
No. 4096. Male inlet and outlet.

No. 4096-B. Female inlet and male outlet.

Fitted with brass clean-out plug.

Painted or galvanized.

Size, 2 inches.



No. 4132 McDonald Diamond Cast Iron Running Traps

Has deep seal. Threaded male on both ends for iron pipe.

Fitted with brass clean-out plug. Painted or galvanized.

Sizes: 1¼, 1½ and 2 inches.

Diamond Close Pattern Half S Cast Iron Traps

With Brass Trap Screw

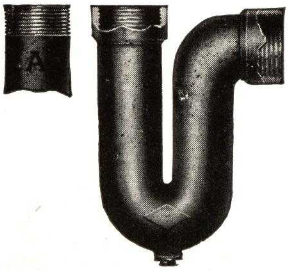


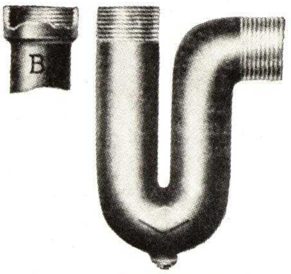
Plate 4161 with Inside Thread Inlet

Size Inches	Price, Each Painted	Galvanized
1¼	$.80	$1.20
1½	1.05	1.55
2	1.35	2.10

Plate 4161A with Outside Thread Inlet

Size Inches	Price, Each Painted	Galvanized
1¼	$.80	$1.20
1½	1.05	1.55
2	1.35	2.10

McDonald Diamond Cast Iron Close Pattern Half S or P Traps



Threaded for iron pipe. Trap has 2¾-inch deep seal. The 1½-inch size can be made with inlet extending 2 inches above top of outlet.

No. E-4162. Male inlet and outlet.

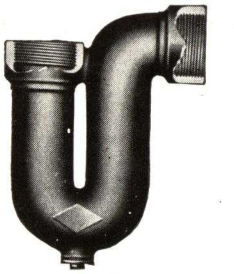
No. E-4162-B. Female inlet and male outlet.

Slip joint nut may be used on outlet end of trap for connection to waste tube, if desired. Slip joint nut on 1¼-inch trap will fit 1¼-inch o.d. waste tube; on 1½-inch trap will fit 1½ or 1¼-inch o.d. waste tube, as ordered.

Fitted with brass clean-out plug.

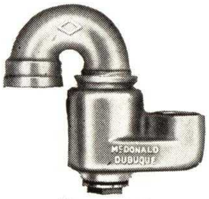
Painted or galvanized. Sizes: 1¼, 1½, and 2 inches.

No. E-4162-C McDonald Diamond Cast Iron Close Pattern Half S or P Traps

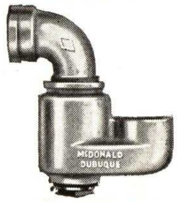


Threaded for iron pipe. Trap has 2¾-inch deep seal. Female inlet and outlet. Top of inlet is on same level as center of outlet. Fitted with brass clean-out plug.

Painted or galvanized. Size, 1½ inches.



No. 4153-S



No. 4154-P

McDonald Centrifugal Cast Iron Traps

Anti-Syphon—Adjustable

Trap has 4-inch seal. Inlet attaches to body of trap so that it provides a positive centrifugal flow of water. Elbows and bends have fine threads where they screw into body providing fine adjustment. Outlet ends threaded for iron pipe.

Aluminum finish.

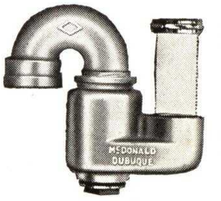
Furnished in 1¼ or 1½-inch sizes.

Packed in individual cartons.

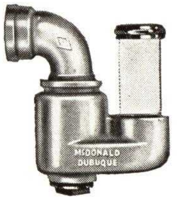
No. 4153-S, S trap only.
No. 4154-P, P trap only.

McDonald Centrifugal Cast Iron Traps

With Nickel Plated Slip Joint Nut



No. 4153-SN
S Trap



No. 4154-PN
P Trap

An anti-syphon, adjustable trap with 4-inch seal.

Inlet attaches to body of trap so that it provides centrifugal flow of water.

Elbows and bends have fine threads where they screw into body providing fine adjustment. Outlet ends threaded for iron pipe.

No. 4153-SN, S trap.
No. 4154-PN, P trap.

Aluminum finish. Sizes: 1¼ or 1½ inches.
Individually packed.

No. 4140 Diamond Cast Iron Bottle Traps

Female Both Ends

This trap is made with brass clean-out screw and is threaded for iron pipe.

Size	inches	1¼	1½
Price, Painted	each	**$1.00**	**$1.50**
" Galvanized	"	**1.50**	**2.25**

No. 4148 Diamond Cast Iron Bottle Traps

Slip Joint Inlet—Female Outlet

This trap is made with brass clean-out screw and is threaded for iron pipe.

Size	inches	1¼	1½
Painted	each	**$1.25**	**$1.80**
Galvanized	each	**1.75**	**2.55**

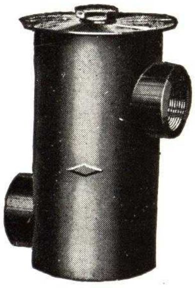
Cast Iron Drum Traps

No. 4168

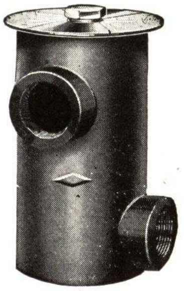
All connections are threaded for iron pipe. Outlet can be placed in any position and can be used where joists are only 8 inches between plaster and floor. Fitted with nickel-plated brass trap screw with projecting rim and ⅞-inch nut for wrench, or countersunk if desired.

Water seal is 3½ inches, outside diameter, 4¼ inches, height, 5¼ inches; regularly threaded for 1½ or 1¼-inch pipe.

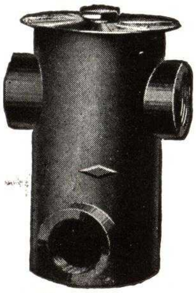
No. **4168**, Painted	each	**$2.25**
No. **4168**, Galvanized	each	**3.25**



No. 4200



No. 4204



No. 4208

Cover is threaded for 3-inch iron pipe so that an iron pipe plug can be substituted during roughing in for testing purposes.

Nos. 4200, 4204 and 4208 are regularly tapped for 1½-inch iron pipe, but may be tapped for 2-inch pipe at same cost.

Size	inches	4x8½	4x10
Nos. **4200** and **4204**, Painted	each	**$2.50**	**$2.75**
Nos. **4200** and **4204**, Galvanized	each	**3.50**	**4.00**
No. **4208**, Painted	each	**2.75**	**3.00**
No. **4208**, Galvanized	each	**3.75**	**4.25**

No. 4210 McDonald Diamond Cast Iron Drum Traps

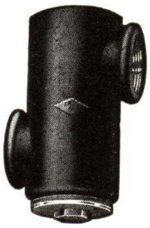
Has cast iron body tapped on sides and top for 1½-inch pipe. The side openings are for waste and inlet, while the top opening is for a 1½-inch nipple of desired length to reach the flange on the floor. The nickel-plated brass cover is tapped inside for 1½-inch pipe, and screws on to a 1½-inch nipple in the top of the trap. Cover is flanged to make a finish on the floor, and is 3 inches in diameter. Full 2-inch water seal.

Size, 3x6½ inches.

Furnished painted or galvanized.

Available with chromium-plated hex or nickel-plated or chromium-plated countersunk covers.

McDonald Diamond Cast Iron Drum Traps



No. 4211

Has cast iron body tapped on bottom and sizes for 1½-inch iron pipe, and is fitted with a rough brass clean-out plug in bottom.

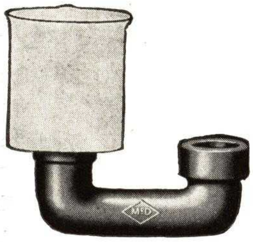
Size, 3x6½ inches.

Furnished painted or galvanized.

No. 4214

Same as above except with two 1½-inch tappings on side, 2-inch tapping on bottom, and 2-inch Detroit code clean-out plug. Furnished painted aluminum.

No. 1190 McDonald Cast Iron Bath Trap Ells



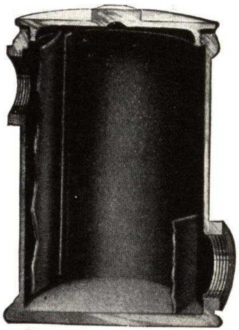
Used with any trap measuring 4x5 inches. Will rough in a 4x5-inch cast iron drum trap in 7½-inch height, where it requires 8 inches when a 1½-inch street ell is used.

Center to center, 5 inches.

Tapped, 1½-inch.

Weight, 3½ pounds.

McDonald Diamond Cast Iron Grease Traps



Nos. 4216 and 4220 Sectional

No. 4220, with Bolted Cover

Designed for use under a kitchen sink, or in connection with the outlet of any other fixture through which a considerable amount of grease may flow.

A baffleplate is cast integral with the trap, immediately in front for the lower opening (inlet), causing the water to rise when entering the trap, the grease collecting and remaining at the top.

A large baffleplate protects the outlet or upper opening, and prevents the grease from flowing out, as the water must first go down and come up around the baffleplate before leaving the trap. Baffleplate may be withdrawn and the trap easily cleaned when necessary.

The trap screw is 6¼-inch solid brass polished cover.

No. 4216, with threaded cover.

No. 4220, with bolted cover.

Cast iron body of trap has an outside diameter of 7 inches and is 10½ inches high. Inlet and outlet threaded 1½-inch iron pipe, but can be tapped for 2-inch pipe.

Painted, galvanized or painted white enamel. Covers can be furnished nickel plated or chromium plated when specified.

McDonald Diamond Cast Iron Grease Traps

No. 4224, with Threaded Cover

No. 4225, with Bolted Cover

Recommended for use under kitchen sinks, laundry tubs, or other fixtures where grease and soap are likely to accumulate and lodge in waste pipes.

A 1¼-inch brass trap screw is fitted in the web of the interceptor, so that outer space and waste pipe may be reached for cleaning.

Polished brass threaded cover is 6 inches in diameter, either hexagon or countersunk for wrench.

No. 4224, with threaded cover.

No. 4225, with bolted cover.

Size, 7x10 inches.

Inlet and outlet and vent openings are tapped for 2-inch iron pipe.

Galvanized or painted white enamel. Nickel plated or chromium plated cover can be furnished when specified.

No. 4228 McDonald Jumbo Cast Iron Grease Traps

With 6-Inch Trap Screw

Size of outside, 12x10½ inches.

Size of inlet, outlet, and vent, 2 inches.

Furnished painted with polished brass cover, galvanized with polished brass cover, and painted white enamel with polished brass cover.

Nickel-plated trap screw is extra.

Also available with bolted cover.

Josam Sediment and Hair Interceptors

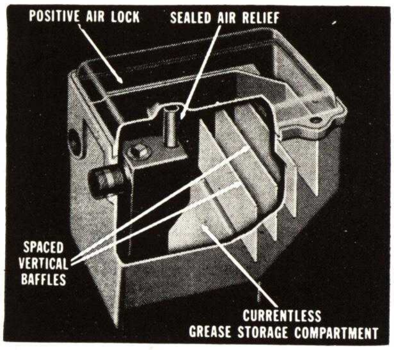
For use in connection with lavatories in barber shops, beauty parlors, residences, hotels, hospitals, and wherever foreign matter should be prevented from entering waste lines. Absolutely non-syphoning.

Cast brass polished body, removable brass screen and cleanout plug, female threaded outlet and inlet tapped for brass tubing. Series D-10 has 2-inch seal; Series D-20 has 7-inch seal and 1½-inch top swing joint outlet connection with ground joint fitting.

Optional at added cost: chrome plated.

No.	D-10	D-11	D-20	D-21
Polished Brass . . . each	**$14.00**	**$14.00**	**$14.00**	**$14.00**
Nickel Plated . . . each	**16.00**	**16.00**	**16.00**	**16.00**
Chrome Plated . . . each	**20.00**	**20.00**	**20.00**	**20.00**
Inlet . . . inches	1¼	1½	1¼	1½
Outlet . . . inches	1½	1½	1½	1½

Boosey Air-Away Grease Interceptors



Made of painted cast iron with internal, sealed air relief and positive air lock. Tap or hub connections. Removable cover is pressure tight.

Vertical step baffles, spaced to allow gravity separation of the grease, direct the flow downwards and below the grease storage compartment. The solids and currents are confined to the flow-way by the baffles, whose skimming action separates grease from waste water.

Grease storage compartment protected against currents and turbulent motion by the inlet scupper, the vertical baffles and the outlet fitting.

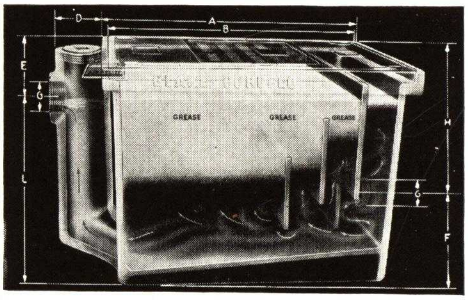
Internal air relief allows excess air in the interceptor to escape to the sewer. Displacement of the interceptor's contents by the development of internal head pressure, through the accumulation of excessive amounts of air, is thus prevented. Positive air lock is formed by retaining a predetermined amount of air in top of interceptor.

Series 1508. For use where interceptor is to be installed on floor.

Series 1509. For use where interceptor is to be installed flush with floor.

Prices and specifications furnished on request.

Blake Pure-Flo Grease Interceptors



Over 95 per cent grease interception, whether waste water is hot or cold; efficiency is constant at all temperatures.

Definite, positive action based on natural laws, combined with design of baffles and routing of the flow, proceeds to separate grease, oil, fats; to eliminate the water and solids.

Features: easy removal of grease; automatic air pressure control; odor proof.

Type	L-1160	L-1161	L-1162	L-1163	L-1164
Each	**$30.00**	**55.00**	**78.00**	**116.00**	**187.00**
Flow . . . gph.	300	600	800	1200	1500
Dimen. A . . . in.	16¾	19	21¾	24	27¼
Dimen. B . . . in.	15¾	18	21	23	26¼
Width . . . in.	13¾	14¾	17½	19	21
Dimen. D . . . in.	2½	3	4½	4½	4½
Dimen. E . . . in.	5	5¾	5	5	4½
Dimen. F:					
High Inlet . . . in.	9½	10½	13½	15¼	15
Low Inlet . . . in.	. . .	6	6	6	6
Dimen. G . . . in.	1½–2	1½–2	1½–2–3	1½–2–3	1½–2–3
Dimen. H:					
High Inlet . . . in.	4	5	4¼	4¼	4½
Low Inlet . . . in.	. . .	9½	11¾	13½	13½
Dimen. J . . . in.	8½	9¾	12¾	14½	15
Weight . . . lb.	154	199	324	365	450

Josam Cascade Grease Interceptors

Based on the principle of the water fall. Grease is separated with speed and completeness regardless of the temperature of waste water. Solids and sediment are evacuated preventing decomposition of solids which cause foul odors.

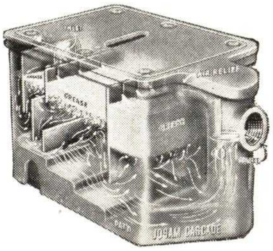
Baffles especially designed, scientifically placed, properly located, make possible better than 95 per cent grease interception efficiency of grease, fats and oils from waste water. No cold water connections are required. Intercepted grease easily removed by raising cover.

In past years, the general procedure of installing grease interceptors was to select a size which appeared to be large enough for the job, and in most cases this selection of size was determined by the manufacturer's published flow rate or grease holding capacity compared with the individual's judgment as to whether the unit would be large enough for the job.

When installing the grease interceptor which was selected for a particular job, no consideration was given to the flow rate out of the fixture or fixtures to which the interceptor was to be connected, and in practically all cases, the actual flow rate through the interceptor exceeded the manufacturer's recommended maximum. When the manufacturer's maximum recommended flow rate is exceeded, no interceptor will maintain a high degree of efficiency. As a result much of the grease in the waste water will pass through the interceptor into the waste lines. Through exhaustive study of this problem, Josam engineers have developed the basic principle that maximum efficiency of the grease interceptor is dependent on securing the proper rate of flow from the fixtures to which the interceptor is connected.

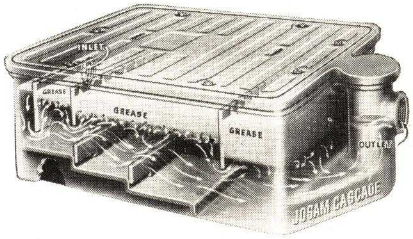
In order that interceptors will be protected against flow rates higher than the rated maximum, a flow control fitting has been adopted that will, if correctly installed maintain the rate of flow at or below the maximum rated capacity of the interceptor with which it is used.

Series J Standard Type



Furnished for all types of installations where outlet of fixture is high enough to accommodate standard size unit.

Series J-DW Low-Boy Type



For use with dishwashers or any type of fixture having low outlet. Can be installed on floor next to dishwashing machine.

Types of Flow Control Fittings to Suit Various Grease Interceptor Installations:

Series 180 Under-Fixture Type

For use with interceptors, sizes, J-00, J-0 and J-1 when serving a single compartment sink or other single fixture installations. Size of slip-joint inlet will be furnished to suit the tailpiece spud of the fixture. To be used and installed as close to underside of fixture as possible either when interceptor is installed on same or on floors below fixture.

Series 190 Angle Type

For use with interceptors, sizes J-00, J-0 and J-1 when serving a double compartment sink or other more-than-one fixture installations and either when interceptor is installed on same floor or on floors below fixture. Also for use with larger size interceptors when they are installed on floors below fixture or fixtures being served.

Series 200 Internal Type

This type of flow control is an integral part of interceptors, sizes J-2, J-3, J-3DW, J-4, J-4DW and J-5 and when these units are installed on same floor as fixture or fixtures they will serve, no other flow control is necessary. When any of these interceptors are installed on floors below fixture or fixtures, an additional angle type flow control, Series 190, will be provided for installation as close to under side of fixture or fixtures as possible.

Prices on All Sizes of Grease Interceptors

Size Interceptor	Each	Commercial Installation		Industrial Installation		Size Inlet In.	Size Outlet In.	Roughing Centers Inches	Over-all Ht. In.	Over-all Lgth. In.	Overall Width Inches	Weight Pounds
		Flow Rating GPM.	Grease Cap. Lb.	Flow Rating GPM.	Grease Cap. Lb.							
J-00	**$20.00**	4	8	...	...	2	2	6½	10	16¼	9½	52
J-0	**30.00**	6	12	...	...	2	2	8¼	12	17⅞	11¾	85
J-1	**55.00**	9	18	...	...	2	2	9½	14	20⅝	12⅜	115
J-2	**78.00**	14	28	...	...	2	2	11	16¾	24½	14¾	185
J-3	**116.00**	20	40	...	...	2	2	12	17⅝	28¼	17	260
J-4	**167.00**	25	50	...	...	2½	2½	13	17¾	35⅞	21	360
J-5	**330.00**	40	80	...	...	2½	3	14	18¾	39½	23	465
J-3DW	**126.00**	22	44	...	...	2	2	7¼	12	31⅞	21⅛	242
J-4DW	**197.00**	30	60	...	...	2½	2½	7	12¾	41¾	25⅛	416
J-11	*	75	170	60	200	3	4	21½	29½	47	39	380
J-12	*	115	260	90	300	4	5	22¼	29½	57	38	575
J-13	*	160	370	215	400	4	5	28	37¾	61	36	950

*Prices on request.

Further information on grease interceptors, installation detail, size recommendations, flow control and grease interceptors for industrial and special purposes will be mailed upon request.

No. 99 Asco All Brass Shower Drains

Without Trap

With 1½ or 2-inch female I.P.T. or 2-inch male thread. Overall diameter, 3¾ inches; strainer diameter, 3³⁄₁₆ inches. Depth, 1¼ inches.

Available with polished top or chromium plated top. Weight, 1 pound.

No. 100 Asco Pan Type Shower Drains

Constructed with cast iron body and flange, brass strainer tube and chromium-plated brass strainer.

Slight slope of the pan of the drain toward the center provides a positive drainage to the strainer tube slots and into the drain proper if there should be seepage through the floor. Strainer tube assemblies are provided with seepage slots, unless otherwise specified. Slots permit all water which has leaked around the outside of strainer or through the floor to flow into drain body itself.

Diameter overall, 7 inches. Diameter strainer, 4½ inches. Strainer tapping, 2 inches. Weight, 6 pounds.

No.	100–1½	100–2
Polished each	$4.20	$4.20
Chromium Plated each	4.70	4.70
I.P.S. Outlet inches	1½	2

Less clamping flange, deduct 50 cents.

No. 62 Asco Deep Seal Floor Drains

Open Pattern Trap with Cleanout

Has full 4-inch water seal and is made in 2, 3, and 4-inch sizes.

Inlets to plain drain threaded I.P. size to admit the use of insertable back water valve or for plug for testing.

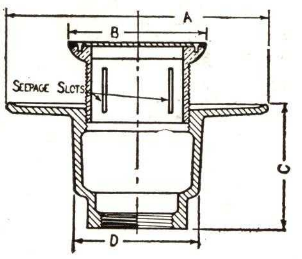
Furnished with plain drain, No. 62, or with back water valve, No. 62BW.

Size inches	2	3	4
Top Diameter inches	8	10¼	12

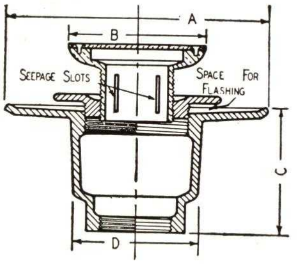
Available with 1½- or 2-inch I.P. outlet on 2-inch drain at extra cost.

Asco Government Type Shower Drains

Pan Type—Without Integral Trap



Series No. 1000



Series No. 1000F

Black or galvanized cast iron body, polished brass chromium plated strainer or all brass type available.

Size Outlet Inches	Without Flashing Ring No.	With Flashing Ring No.	Dimen., Inches A	B	C	D	Str. Tap. In.	Wt., Lb. Series No. 1000	Wt., Lb. Series No. 1000F
1½	**1041½**	**1041½F**	8¾	4½	4	4	3	9	10
2	**1042-A**	**1042-AF**	8¾	4½	4	4	3	9	10
3	**1063**	**1063F**	9¾	6	3½	5	3	13	15
4	**1064**	**1064F**	11¼	6	4¼	5¾	4	19	22

No. L-557 Blake Safety Waste Floor or Shower Stall Drains

Heavy cast iron body with wide flange—cast brass adjustable head with star pattern strainer. Outlet tapped for iron pipe, or for inside caulking with extra deep hub.

Furnished with outlet tapped for iron pipe, and with polished brass top in diameters designated by asterisk (*) below, unless otherwise specified.

Size Outlet Inches	Size Strainer Inches	Outlet Diameter Overall Inches Scrd.	Hub	Cast Iron Body with Pol. Brass Strainer Black Each	Galv. Each	All Brass Each	Add for Strainer N.P. Each	C.P. Each	White Metal Each
1½	*4	7¾	9	$6.50	$7.50	$11.50	$.60	$1.00	$1.50
	4½	7¾	9	7.00	7.50	11.50	.70	1.10	1.75
	5	7¾	9	7.50	8.50	12.50	.80	1.30	2.00
	6	7¾	9	9.00	10.00	14.00	1.00	1.60	2.75
2	*4	7¾	9	6.50	7.50	11.50	.60	1.00	1.50
	4½	7¾	9	7.00	7.50	11.50	.70	1.10	1.75
	5	7¾	9	7.50	8.50	12.50	.80	1.30	2.00
	6	7¾	9	9.50	10.00	14.00	1.00	1.60	2.75
	7	7¾	9	12.00	12.50	17.50	1.50	2.30	4.00
	8	7¾	9	13.00	13.50	18.50	2.00	3.00	4.50
3	4	9⅜	11½	8.00	9.50	14.00	.60	1.00	1.50
	4½	9⅜	11½	8.50	9.50	14.00	.70	1.10	1.75
	*5	9⅜	11½	9.00	10.50	15.00	.80	1.30	2.00
	6	9⅜	11½	10.50	12.00	16.50	1.00	1.60	2.75
	7	9⅜	11½	13.00	14.50	19.00	1.50	2.30	4.00
	8	9⅜	11½	14.00	15.50	20.00	2.00	3.00	4.50
4	5	10⅝	13¼	10.00	12.00	16.50	.80	1.30	2.00
	*6	10⅝	13¼	11.50	13.50	18.00	1.00	1.60	2.75
	7	10⅝	13¼	14.00	16.00	20.50	1.50	2.30	4.00
	8	10⅝	13¼	15.00	17.00	21.50	2.00	3.00	4.50
	10	10⅝	13¼	19.00	21.00	25.50	3.00	5.00	6.50
†Add				1.00	1.50	2.50	....	....	....

†If flashing ring is wanted.

No. L-560 Blake Safety Waste Floor or Shower Stall Drains

With Integral Trap

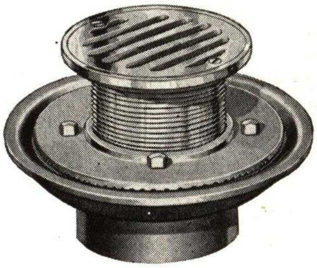
Heavy cast iron body, shallow pattern, with cast brass adjustable head and star pattern strainer. Side outlet tapped iron pipe size—can be equipped with soil pipe adapters.

Polished brass top in diameters designated by asterisk (*) below furnished unless otherwise specified.

Size Outlet Inches	Size Strainer Inches	Diam. Flge. In.	Cast Iron Body with Pol. Brass Strainer Black Each	Galv. Each	All Brass Each	Add for Strainer N.P. Each	C.P. Each	White Metal Each
1½	*4	8¾	$12.00	$15.00	$29.50	$.60	$1.00	$1.50
	4½	8¾	12.50	15.00	29.50	.70	1.10	1.75
	5	8¾	13.00	16.00	30.50	.80	1.30	2.00
	6	8¾	14.50	17.50	32.00	1.00	1.60	2.75
2	*4	8¾	12.00	15.00	29.50	.60	1.00	1.50
	4½	8¾	12.50	15.50	29.50	.70	1.10	1.75
	5	8¾	13.00	16.00	30.50	.80	1.30	2.00
	6	8¾	14.50	17.50	32.00	1.00	1.60	2.75
	7	8¾	17.00	20.00	34.50	1.50	2.30	4.00
	8	8¾	18.00	21.00	35.50	2.00	3.00	4.50
3	4	10⅝	16.00	19.00	33.50	.60	1.00	1.50
	4½	10⅝	16.50	19.50	34.00	.70	1.10	1.75
	*5	10⅝	17.00	20.00	34.50	.80	1.30	2.00
	6	10⅝	18.50	21.50	36.00	1.00	1.60	2.75
	7	10⅝	21.00	25.00	45.20	1.50	2.30	4.00
	8	10⅝	22.00	26.00	46.20	2.00	3.00	4.50
4	5	13½	21.50	27.50	56.80	.80	1.30	2.00
	*6	13½	23.00	29.00	58.30	1.00	1.60	2.75
	7	13½	25.50	31.50	60.80	1.50	2.30	4.00
	8	13½	26.50	32.50	61.80	2.00	3.00	4.50
	10	13½	30.50	36.50	65.80	3.00	5.00	6.50
†Add			1.00	1.50	2.50	....	....	....

†If flashing ring is wanted.

No. 1200-RA Boosey Waterproof Dual-Service Floor Drains

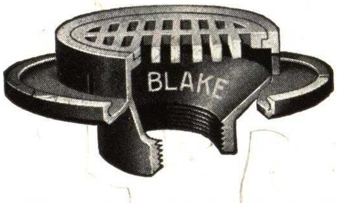


An adjustable seepage drain for showers, receptors, tile floors and gutters. Also for terrazzo, mosaic, concrete and composition floors.

With slotted strainer. Clamping ring eliminates bolt holes through flashing and provides space for sealing lower edge of flashing. Flashing ring clamped securely with four brass bolts.

Outlet In.	Strainer Top In.	Body Diam. In.	Wt. Lb.	Iron Body With Pol. Bronze Top Painted Each	Iron Body With Pol. Bronze Top Galv. Each	All Bronze Each	Add for Bronze Top N.P.	Add for Bronze Top C.P.	Add for Bronze Top White Metal
2	4	8¼	9	$9.53	$13.72	$17.78	$.76	$1.27	$1.91
2	5	8¼	10	10.80	15.24	19.05	1.02	1.65	2.54
2	6	8¼	11	12.70	17.53	20.96	1.27	2.03	3.49
2	7	8¼	12	15.88	21.34	24.13	1.91	2.92	5.08
3	4	9¼	14	11.43	16.76	20.96	.76	1.27	1.91
3	5	9¼	15	12.70	18.29	22.23	1.02	1.65	2.54
3	6	9¼	16	14.61	20.57	24.13	1.27	2.03	3.49
3	7	9¼	17	13.78	24.38	27.31	1.91	2.92	5.08
4	5	10¼	18	13.97	20.57	24.13	1.02	1.65	2.54
4	6	10¼	19	15.88	22.86	26.04	1.27	2.03	3.49
4	7	10¼	20	19.05	26.67	29.21	1.91	2.92	5.08

No. L-885 Blake Heavy Duty Industrial or Area Drains



Heavy construction with anti-tilting flat grate and wide double drainage flange. Adaptable for use in dairies, cold storage rooms, areaways, basements, etc. Outlet tapped for screw pipe, or with deep hub for inside caulking. Regularly furnished all black cast iron less flashing ring, and with outlet for screw pipe.

Size Outlet In.	Diam. Strainer Inches	Diam. Flge. In.	Cast Iron Body Black Each	Cast Iron Body Galv. Each	Cast Iron Body with Pol. Brass Strainer Black Each	Cast Iron Body with Pol. Brass Strainer Galv. Each	Add to Price of Drain with Brass Strainer for Top N.P. Each	Add to Price of Drain with Brass Strainer for Top C.P. Each	Add to Price of Drain with Brass Strainer for Top White Metal Each
2	8¾	13¼	$7.00	$10.20	$13.50	$16.20	$2.00	$3.00	$6.00
3	8¾	13¼	7.00	10.20	13.50	16.20	2.00	3.00	6.00
4	8¾	13¼	7.00	10.20	13.50	16.20	2.00	3.00	6.00
5	12	18	13.00	19.40	24.00	29.40	4.00	6.00	9.00
6	12	18	13.00	19.40	24.00	29.40	4.00	6.00	9.00
Add for Flashing Ring........			*1.50	*2.00	*1.50	*2.00	....	....	....
Add for Dome Strainer......			†2.75	†4.00	†6.80	†6.80	....	....	....

*Add for cast iron inside strainer, $1.00; for hinged grate, $2.00; for locking grate, $1.00; for ½-inch primer tapping, $1.00.

†Can also be furnished in all brass.

Blake Extra Heavy Floor Drains

With Mud or Refuse Bucket

No. L-940 with Bottom Outlet

Suitable for schools, warehouses, dairies, coal rooms, etc. Heavy construction with hinged bar strainers designed to withstand heavy trucking, etc. Furnished either for screw pipe or for caulking. Deep bucket to intercept and retain all sediment.

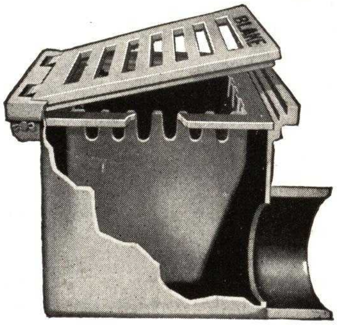
No. L-940 with Bottom Outlet

Furnished all black cast iron with outlet for caulking unless otherwise ordered.

No. L-945 with Side Outlet, Integral Trap, and Brass Cleanout Plug

Furnished all black cast iron with outlet for caulking unless otherwise ordered.

No. L-950 with Side Outlet, Less Trap



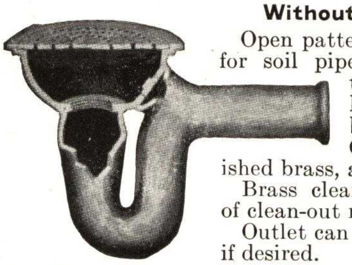
Furnished all black cast iron with outlet for caulking unless otherwise ordered.

Prices

Size Outlet Inches	Cast Iron Black Each	Cast Iron Galv. Each	Cast Iron Body with Pol. Brass Strainer Black Each	Cast Iron Body with Pol. Brass Strainer Galv. Each	Add to Price of Drain with Brass Strainer for Top N.P. Each	Add to Price of Drain with Brass Strainer for Top C.P. Each	Add to Price of Drain with Brass Strainer for Top White Metal Each
2	$28.50	$39.70	$50.50	$59.70	$7.00	$11.00	$14.00
3	28.50	39.70	50.50	59.70	7.00	11.00	14.00
4	28.50	39.70	50.50	59.70	7.00	11.00	14.00
5	28.50	39.70	50.50	59.70	7.00	11.00	14.00
6	28.50	39.70	50.50	59.70	7.00	11.00	14.00

No. E-4834 McDonald Deep Seal Floor Drains

Without Back Water Valve



Open pattern trap with spigot end for soil pipe. Body is cast iron, tapped for iron pipe below strainer, which can be plugged for testing. Cover of cast iron or finished brass, as specified.

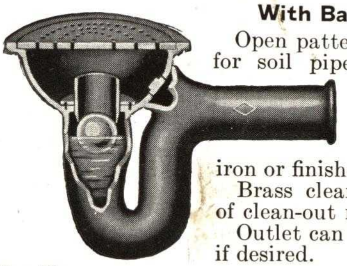
Brass clean-out plug permits use of clean-out rod or wire.

Outlet can be tapped for iron pipe, if desired.

Size No.		360	360-A	370
Size Connection	inches	2	2	3
Size Top	inches	8½	10	10½
Depth Overall	inches	11	10	13
Depth Seal	inches	4	3	4

No. E-4834-BW McDonald Deep Seal Floor Drains

With Back Water Valve



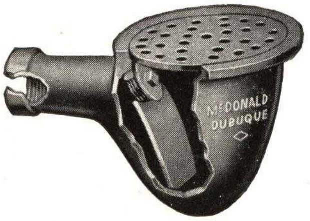
Open pattern trap with spigot end for soil pipe. Body is cast iron, tapped for iron pipe below strainer, into which back water valve is screwed. Cover of cast iron or finished brass, as specified.

Brass clean-out plug permits use of clean-out rod or wire.

Outlet can be tapped for iron pipe, if desired.

Size No.		310	310-A	325
Size Connection	inches	2	2	3
Size Top	inches	8½	8	10½
Depth Overall	inches	11	10	13
Depth Seal	inches	4	3	4

No. E-4821 McDonald Diamond Cast Iron Floor Drains



Designed for use in cement or tile floors in basements or laundries.

Strainer fits flush with top of body, without the use of bolts.

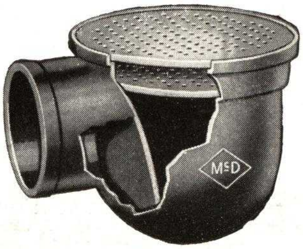
Outlet is 2-inch horizontal, permitting waste pipe to be run close to floor.

Tapped female 2-inch while outside measurement is proper size to calk into the hub of a 2-inch soil pipe.

Fitted with brass clean-out plug which permits use of cleaning rod or wire.

Diameter of strainer, 6½ inches. Body is 8 inches deep. Overall length, 12 inches.

No. E-4822 McDonald Willet's Pattern Cesspools



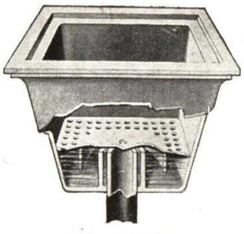
Used in cellars and cement floors. Cast iron body and strainer. Fitted with double strainer but available with single strainer. Strainer fits in body of cesspool without the use of bolts or screws, and is removable for cleaning. Upper strainer is flush with top, lower strainer is 1½ inches below the top. When ordering with single strainer, specify whether top or bottom strainer is wanted. Finished brass strainer is available when specified.

Outlet has hub end to fit 4-inch soil pipe, being horizontal, permits waste pipe to run close to floor.

Diameter, 10 inches. Depth, 9 inches.

McDonald Diamond Universal Slop Sinks

With Plain Strainer


No. E-4801

Designed for general use in laundries, basements, garages, and stables. Cast iron body and strainer.

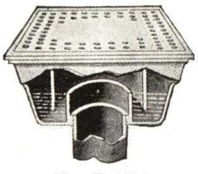
A bell cast solid with strainer provides positive water seal.

No. E-4801. With outlet which slips over soil pipe for calking. Calking can be done from inside of sink.

No. E-4802. With outlet tapped for iron pipe thread.

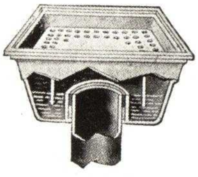
Size Top	inches	12x12	14x14	16x16	16x16
Size Pipe	inches	2	2	2	4

McDonald Diamond Cellar Traps and Cesspools


No. E-4813
Cellar Trap

Designed for use in cellar floors. Cast iron body and strainer. A bell cast solid with strainer provides positive water seal.

Size pipe, 2 in.

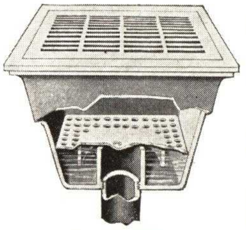

No. E-4814
Cesspool

No. E-4813 Cellar Trap. With strainer flush with top. Size top, 6x6 or 10x10 inches.

No. E-4814 Cesspool. With strainer set down in body. Size top, 10x10 inches.

The 10x10-inch size is furnished for either 2-inch wrought pipe or for soil pipe as ordered.

McDonald Diamond Universal Stable and Garage Cesspools


No. E-4812

Designed for general use in stable or garage floors.

Extra heavy cast iron strainer and body.

A bell cast solid with strainer provides positive water seal.

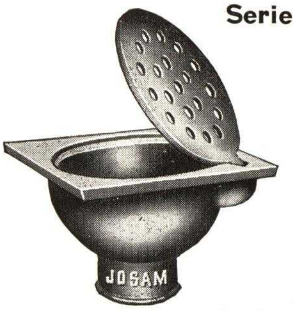
No. E-4811. With outlet which slips over soil pipe for calking. Calking can be done from inside of cesspool.

No. E-4812. With outlet tapped for iron pipe thread.

Size Top	inches	12x12	14x14	16x16	16x16
Size Pipe	inches	2	2	2	4

Series 70 Josam Area Drains

With Round Hinged Perforated Strainer



A square top drain for use in areaways, basements, stock rooms, corridors and similar locations. Drain is amply proportioned and will withstand usual truckage. Complies with Government specification. Spigot outlet unless otherwise ordered.

	Cast Iron		Cast Iron Body Polished Brass Top		Add to Polished Brass Top		Diam. Outlet	Diam. Top
Type	Black Each	Galv. Each	Black Each	Galv. Each	N.P. Each	C.P. Each	In.	In.
72	$1.50	$3.60	$4.50	$7.20	$1.70	$2.00	2	6x6
73	3.00	7.20	8.40	13.70	2.70	3.00	3	9x9
74	6.00	14.00	16.10	26.50	3.80	4.00	4	12x12

No. E-4831 McDonald Cast Iron Cesspools

With Bell Trap

Heavy cast iron with bell attached to strainer, making a good water seal. Outlet end fits into hub of soil pipe or soil pipe fittings.

Furnished in standard or extra heavy. Tapped for iron pipe is extra.

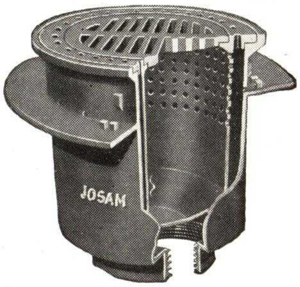
Can be furnished with brass strainer or all brass, rough polished or nickel plated.

Size Square..............inches	6x6	9x9	12x12	13x13
Fits Pipe................inches	2	3	4	4
Weight, Standard........pounds	3¾	7½	16	....
Weight, Extra Heavy.....pounds	...	13½	..	19

Series 5460 and 5470 Josam Non-Clog Triple Drainage Floor Drains

Heavy Duty—With Deep Bucket

Cast iron, lacquered non-clog triple drainage floor drain with double drainage flange, weepholes, threaded bottom outlet, round top, perforated deep sediment bucket, and integral auxiliary drainage rim so designed that grate cannot be set in place unless bucket is in position.



Optional at added cost: galvanized, all brass or Everdur; polished brass, chrome plate or white metal top; side outlet; square top; backwater valve; deep seal trap; flashing clamp device.

Inside calk bottom outlet available at no added cost.

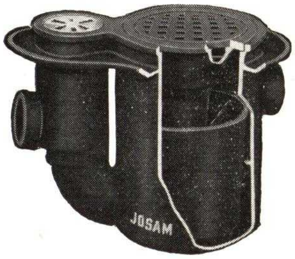
Series 5460

No.	Each	Outlet In.	Top In.	Depth In.
5463	$48.00	3	15⅜	10⅛
5464	48.00	4	15⅜	10¼
5465	50.00	5	15⅜	10⅜
5466	50.00	6	15⅜	10⅜

Series 5470

No.	Each	Outlet In.	Top In.	Depth In.
5473	$58.00	3	15⅜	13⅛
5474	58.00	4	15⅜	13¼
5475	60.00	5	15⅜	13⅜
5476	60.00	6	15⅜	13⅜

Series 6800 Josam Heavy Duty Floor Drains



Cast iron, lacquered, extra deep combined floor drain and trap with side outlet, auxiliary vent, round top, brass flush floor cleanout, deep sediment bucket, funnel shaped internal seal, and heavy duty loose grate with rim of seal so designed that grate cannot be set in place unless seal is in position.

Optional at added cost: galvanized body; galvanized, polished brass or chrome plate; Everdur or white metal top; backwater valve; solids retainer attached to funnel and bucket.

No.	Each	Slab Thick. In.	Top In.	Grate In.	No.	Each	Slab Thick. In.	Top In.	Grate In.
6804	$136.00	4	24½	10¾	6824	$187.00	4	24½	14
6806	146.00	6	24½	10¾	6826	200.00	6	28½	14
6808	156.00	8	24½	10¾	6828	213.50	8	28½	14
6812	166.00	12	24½	10¾	6832	227.00	12	28½	14

Series 250 ADC Josam Double Drainage Trap and Drains

Self-Cleansing Type

For showers, urinals or floors of concrete, tile, marble or any composition construction where a combined trap and drain is needed. Can be furnished with new type clamping device to bind flashing material to drain at $1.00 extra. Special self-cleansing design. Strainer and collar screw into body of drain to meet variations in floor level and thickness. Body of cast iron. Strainer and collar furnished in brass polished or nickel-plated.

No...........................	252ADC	263ADC
Strainer....................inches	5	6
Outlet.......................inches	2	3
Price..........................each	$13.00	18.50

Series 200 Josam Double Drainage Floor Drains

With Deep Drum Trap

Cast iron combined floor drain and integral deep drum type P trap with double drainage flange, weepholes, female threaded outlet and adjustable polished brass strainer.

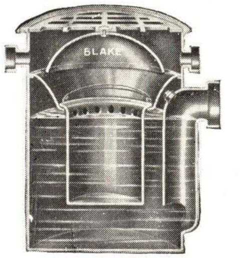
Optional at added cost: galvanized, all brass or Everdur body; chrome plate or white metal strainer; non-clog strainer; hub or spigot adapter for calking; flashing clamp device.

No.	Each	Outlet In.	Strainer In.
201½	$12.00	1½	4
202	13.00	2	5
203	21.00	3	7
204	26.50	4	8

With clamping device, add $1.00.

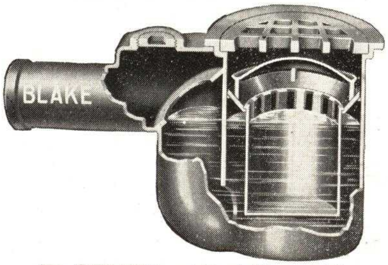
No. 1520 Blake Extra Heavy Garage Drains

For use in private and public garages, etc. Can be furnished without vent, or one of two vent openings, but two vents will be shipped unless otherwise ordered. Made extra heavy, and to receive 4-inch extra heavy pipe. Water seal on small pattern is 6 inches, large pattern, 9 inches. Vent connections are for 2-inch extra heavy pipe.



Size.........inches	16x18	21x30
No. 1520, Comp..ea.	$46.20	$89.00
Without Inside Trimmings..each	39.40	75.80
For Brass Top..add	35.00	52.00
Weight, Com....lb.	165	410
Repair Parts		
Top Grate.....each	$5.00	$10.00
Top Shelf.....each	3.00	6.00
Bottom Shelf..each	3.00	8.00
Bucket.........each	4.00	9.00
Top Grates, Brass ea.	15.00	20.00

Blake Economy Safety Garage Drains



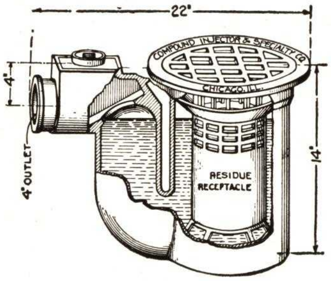
No. 1545 Without Back Water Valve

Extra heavy with reinforced strainer. Complete with deflectors and removable mud bucket. Plain drain furnished with 2-inch I.P.S. surface clean-out. Drain with back water trap has clean-out plate large enough to give easy access to valve. Water seal, 5 inches; outlet, 4 inches; diameter of top, 12 inches; total depth, 14 inches; total length, 26½ inches. Weight, 100 lb.

No. 1545, without Back Water Valve..........each	$36.30
No. 1550, with Back Water Valve.............each	44.00

For vented hood, 9 inches high, add $13.20.

Dehn Peerless Garage Floor Drains



No. 0-6050

Extra heavy bar grate, refuse separator and catch basin. Four-inch outlet only.

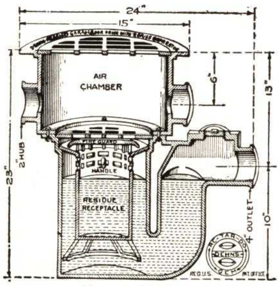
No. 0-60 has automatic back water valve with hand hole, flush with floor.

No. 0-6050 is furnished less back water valve, with 2-inch iron pipe threaded brass countersunk head clean-out plug, flush with floor.

Diameter top, 12 in.
Depth overall, 14 in.

Number		0-60	0-6050
With Iron Top and Strainer	each	$44.00	$36.00
With Brass Top and Strainer	each	78.00	67.00
Approximate Weight	pounds	100	100

Dehn Peerless Heavy Duty Garage and Floor Drains



No. 0-61-A
With Vented Hood

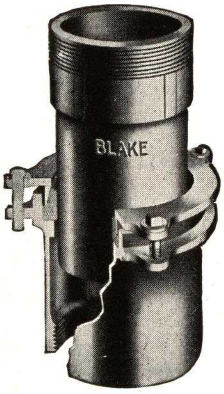
For use in private or small public garages. The receiving hood is provided with 2-inch vent hub openings on either side from which vent pipes can be extended to the outside of building to allow fumes or gases from the waste gasoline to escape and to permit a continuous circulation of fresh air through the air chamber to purify the air in the garage. Has refuse separator, retainer, catch basin, iron top, and strainer. No. 0-6150-A is the same as No. 0-61-A but has watertight expansion joint shelf with outlet opening for connection below ceiling.

No.		0-61-A	*0-6150-A
Each		$48.00	44.00
Size of Outlet	inches	4	4
Size of 2-Vent Hub. Connections	inches	2	2
Diameter of Top	inches	15	15
Depth Overall	inches	23	23
Length Overall	inches	24	18
Approximate Weight	pounds	175	160

*Furnished less trap on outlet.

No. 1500 Blake Expansion Joints

With Cast Brass Sleeve—For Roof Drains



Body is heavy cast iron. One-piece smooth turned heavy cast brass sleeve is continuous to top. It is threaded for iron pipe and reinforced at threaded end.

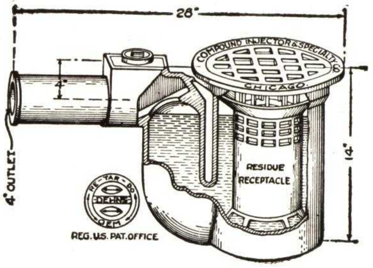
A graphite saturated asbestos packing ring, held in place by a taper gland ring, is expanded against the sleeve by screwing down three brass bolts. This arrangement makes a positive air and watertight joint.

Can be converted to soil pipe connection by adding spigot or hub connectors supplied at extra cost.

I.P. Size In.	**Black** Each	**Galv.** Each	**All Brass** Each	Male I.P. Size In.	Female I.P. Size In.	Extreme Travel In.	Lgth. When Closed In.	Wt. Lb.
2	$8.00	$9.00	$16.50	..	..	..	..	9
3	10.00	11.50	21.00	3	3	2	6	14
4	12.00	14.00	24.00	4	4	2	6	17
5	14.00	16.50	33.00	5	5	2	6	20
6	16.00	19.00	39.00	6	6	2	6	22
8	23.00	28.00	63.00	8	8	2	6	34

Dehn Peerless Heavy Duty Garage Drains

With Refuse Separator and Retainer



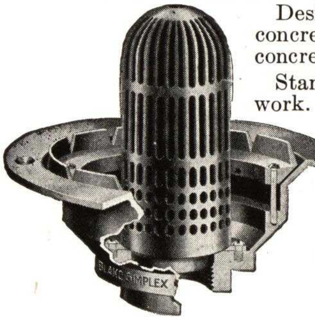
Furnished less automatic back water valve with 2-inch I.P. threaded brass cleanout plug, with 4-inch soil pipe outlet, iron top and strainer.

Size outlet, 4-inches; diameter of top, 12 inches; depth overall, 14 inches.

Approximate weight, 125 pounds.

No. 0-6025-A, Spigot Outlet, Length Overall, 28 Inches each	$36.00
No. 0-6050-A, Hub Outlet, Length Overall, 22 Inches each	36.00

No. 1380 Blake Safety Waste Roof Drains



Designed for wood and precast concrete roofs; also adaptable for concrete poured roofs.

Standard on U.S. Government work. Equipped with heavy dome strainer, large suitable gravel basin, heavy V type slotted gravel stop, and large wide flanged body. Has heavy metal flashing ring secured to drain body with heavy brass studs.

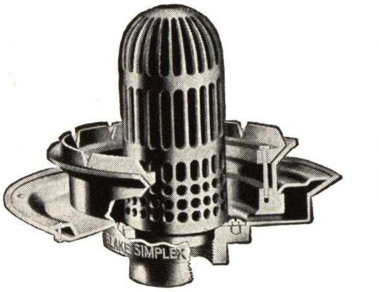
Furnished with hub or screwed outlet.

Size Outlet In.	Cast Iron **Blk.** Each		Cast Iron with Brass Dome **Blk.** Each		**All Brass** Each	**Extra for Pol. Brass** Each	Width Over All In.	Wt. Lb.
	Blk. Each	**Galv.** Each	**Blk.** Each	**Galv.** Each				
2	$16.00	$22.40	$23.50	$28.40	$57.60	$6.00	15	30
3	16.00	22.40	23.50	28.40	57.60	6.00	15	30
4	16.00	22.40	23.50	28.40	57.60	6.00	15	30
5	19.50	27.00	27.50	33.40	68.20	6.00	16¼	34
6	21.50	30.50	31.00	38.20	83.40	6.00	17¼	52
8	30.00	41.20	51.50	59.40	120.30	6.00	19½	63

No extra charge for outlet to be hub end for soil pipe to slip up and caulk inside.

Expansion joints at extra cost.

No. 1385 Blake Safety Waste Roof Drains



A practical trouble-proof roof drain for poured concrete roofs.

Standard on U.S. Government work, drain is equipped with heavy dome strainer, large suitable gravel basin, heavy V-type slotted gravel, and large extra heavy flanged body.

Size In.	ALL CAST IRON		CAST IRON BODY AND BRASS DOME		***§All Brass** Each	Width Over All Inches	Wt. Lb.
	†Black Each	**‡Galv.** Each	***Black** Each	***Galv.** Each			
2	$24.00	$33.40	$31.50	$39.40	$86.40	14⅜	30
3	24.00	33.40	31.50	39.40	86.40	14⅜	30
4	24.00	33.40	31.50	39.40	86.40	14⅜	30
5	27.50	38.00	35.00	44.00	96.00	15¾	42
6	29.50	41.50	37.00	47.50	109.20	17½	49
8	38.00	52.50	45.50	58.20	129.60	19½	65

*For polished brass dome add $6.00.

No extra charge if outlet is to be hub end for soil pipe to slip up for inside caulking.

No. 1148 Boosey Cast Iron Roof Drains

For Built-Up Felt Roofing or Metal Flashing

All connections are visible and convenient to inspect. The shallow, self-cleaning bowl will not collect and hold dirt. Strainer easily removable without disturbing other connections. Sump is an efficient, non-freezing and permanent rain conductor roof connection. Sump is provided with dome guard, 5 inches in height, of greater diameter than sump inlet. This provides more inlet area through strainer and an outer guard to prevent foreign substances entering the downspout line.

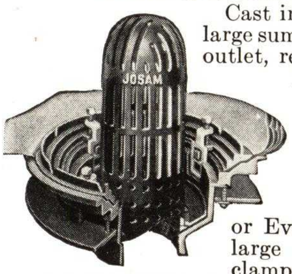
Outlet In.	Strainer Top In.	Wt. Lb.	All Cast Iron Painted Each	All Cast Iron Galv. Each	Iron Body Bronze Strainer Painted Each	Iron Body Bronze Strainer Galv. Each	All Bronze Each	Strainer Only Painted Each	Strainer Only Galv. Each	Strainer Only Bronze Each	Add for Pol. Bronze Strainer
2	9	28	$15.62	$25.60	$21.46	$31.24	$42.67	$3.30	$5.18	$9.14	$4.57
3	9	28	15.62	25.60	21.46	31.24	42.67	3.30	5.18	9.14	4.57
3	13½	50	20.32	34.14	29.85	43.28	73.15	7.62	11.43	17.15	7.62
4	9	28	15.62	25.60	21.46	31.24	42.67	3.30	5.18	9.14	4.57
4	13½	50	20.32	34.14	29.85	43.28	73.15	7.62	11.43	17.15	7.62
5	13½	52	24.77	41.15	34.93	50.90	86.61	8.26	12.34	18.42	7.62
6	13½	52	27.31	46.48	39.37	58.22	105.92	8.89	13.34	20.96	7.62
8	13½	55	38.10	62.79	65.41	90.53	152.78	14.61	22.56	41.91	7.62

Add for Square Top

	9 inch Strainer	13½ inch Strainer
Outlet....inches	2 to 4	3 to 8
All Cast Iron, Painted	$3.81	$5.09
Galvanized	5.03	6.84
All Bronze	6.35	8.26

Series 410 Josam Roof Drains

With High Dome and Sediment Cup



Cast iron, lacquered roof drain with large sump and flange, bottom threaded outlet, removable high dome and sediment cup, and non-puncturing flashing clamp device with integral gravel stop.

Optional at added cost: galvanized, all brass or Everdur; side outlet; galvanized, rough or polished brass or Everdur dome; promenade top; large dome integral with flashing clamp device; standing water collar; separate or integral expansion joint. Inside calk bottom outlet at no added cost.

No.	412	413	414	415	416	418
Each	$16.00	16.00	16.00	19.50	21.50	30.00
Outlet..inches	2	3	4	5	6	8

Series 450G Josam Improved Roof Drains

For Narrow Valleys or Gutters

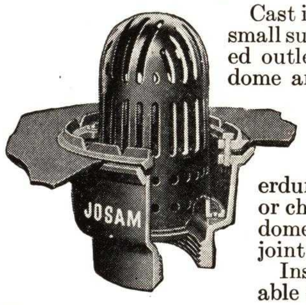
Designed for narrow spaces on any kind of roof construction. Equipped with Josam adjustable clamping ring which eliminates the use of flashing. Has combined removable dome strainer and sediment cup. Furnished with side outlet, Series 450GR, or square flange Series 450GL.

Will meet all requirements where gutter width is not less than 8 inches.

No.	452G	453G	454G	455G
Japanned....each	$9.00	9.00	9.00	10.00
Outlet....inches	2	3	4	5
Weight....pounds	13	13	13	14

Series 440 Josam Roof Drains

With Small Sump and Removable Dome Strainer



Cast iron, lacquered roof drain with small sump and flange, bottom threaded outlet, removable combined high dome and sediment cup, and bolted flashing clamp device integral with gravel stop.

Optional at added cost: galvanized, all brass or Everdur; galvanized, rough, polished or chrome plated brass or Everdur dome; promenade top; expansion joint; side outlet.

Inside calk bottom outlet available at no added cost.

No.	442	443	444	445
Each	$9.00	9.00	9.00	10.00
Outlet....inches	2	3	4	5

Series 430 BS Josam Double Drainage Improved Roof Drains

With Removable Combined Dome Strainer and Sediment Cup

Designed for composition or concrete roofs. No flashing required where slab is 4 inches thick, to imbed double drainage flange in concrete.

Has cast iron body and combined removable dome strainer and sediment cup. Bronze clamping posts and bolts.

No.	Outlet Inches	Each
432BS	2	$24.00
433BS	3	24.00
434BS	4	24.00
435BS	5	27.50
436BS	6	29.50
438BS	8	38.00

Series 4710 Josam Roof Drains

For Pitched Roof

With High Dome and Sediment Cup

Cast iron, lacquered roof drain with large sump and flange, bottom threaded outlet, combined high dome and sediment cup, non-puncturing flashing clamp device with integral gravel stop, for use on pitched roofs up to 8-inch pitch per foot.

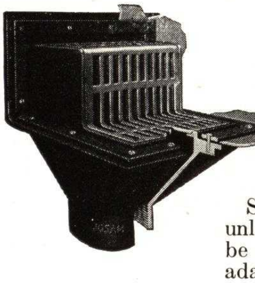
Optional at added cost: galvanized, all brass or Everdur; galvanized, rough or polished brass or Everdur dome; expansion joint. Inside calk outlet available at no added cost.

Pitch of roof must be specified when ordering.

No.	4712	4713	4714	4715	4716
Each	$21.00	21.00	21.00	26.00	28.75
Outlet....inches	2	3	4	5	6

Series 1240 Josam Reversible Angle Roof Drains

For Any Kind of Roof Construction at Parapet Wall



For use on flat roofs. If refuse or debris fills up over the openings in the lower horizontal drainage area, the vertical and top horizontal faces will provide ample drainage area.

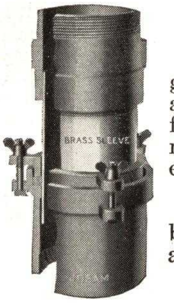
A clamping ring, held by brass screws holds the roofing material in place.

Shipped with threaded female outlet unless otherwise ordered. Outlet can be furnished for inside caulking or adaptor for spigot connection.

No.	1242	1243	1244	1245	1246
With Blk. C.I. Body.ea.	$65.00	65.00	65.00	65.00	65.00
Diameter Outlet....in.	2	3	4	5	6

Series 1810 Josam Expansion Joints

With Brass Sleeve



Cast iron expansion joint with heavy gage brass sleeve, cast iron gland ring, asbestos gasket, male threaded top and female threaded bottom, designed to permit contraction or expansion of 1½ inches each way in the line, or a total of 3 inches.

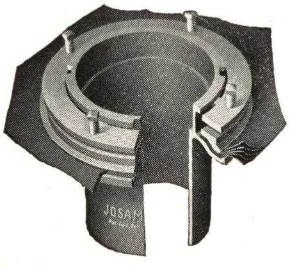
Optional at added cost: galvanized with brass sleeve, all brass or Everdur; hub top and spigot bottom.

No.	1812	1813	1814	1815	1816	1818
Each	$8.00	10.00	12.00	14.00	16.00	23.00
Size ... inches	2	3	4	5	6	8

Series 1870 Josam Vent Stack Sleeves

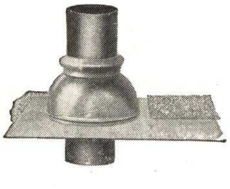
Cast iron, lacquered sleeve with clamping ring and pressure ring with brass set-screws. A water-tight connection between vent stack and roof is obtained without the use of copper, lead or other flashing.

Optional at added cost: galvanized or all brass sleeve and rings.



No.	Each	Outlet Inches
1871½	**$4.20**	1½
1872	**4.20**	2
1872½	**4.80**	2½
1873	**4.80**	3
1874	**6.60**	4
1875	**8.20**	5
1876	**8.90**	6
1878	**12.00**	8

Bullard Adjustable Roof Flashings

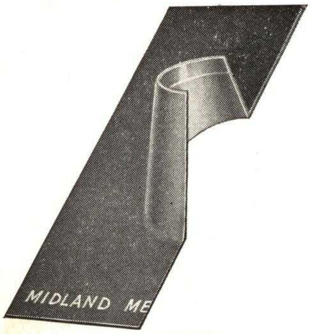


Any one-flashing will adjust to all roof pitches from flat to 45-degree pitch. No solder is required. Flashings are water-tight and rust-proof.

Made of a 2-piece steel or copper ball joint, a flange apron and a lead collar. Made of galvanized sheet iron or copper.

Size Inches	Price per Dozen	Size Inches	Price per Dozen
1¼	**$30.00**	4	**$40.00**
1½	**30.00**	5	**57.00**
2	**34.00**	6	**100.00**
3	**38.00**	..	......

Midland Lead Roof Flashings



Sectional View

This flashing is made entirely of lead in one piece. The neck and base are molded at the same time.

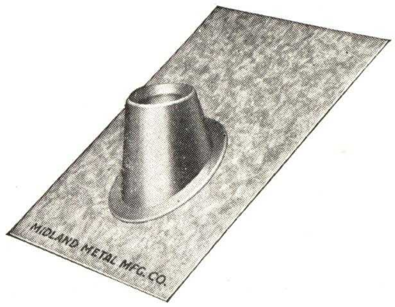
The base is larger than usual, is heavier than 4-pound sheet lead, permitting two rows of shingles to cover the upper part. The angle flashing will fit any pitch roof.

The equipment for producing this flashing has been fully protected by United States letters patent.

Size ... in.	1¼	1½	2	2½	3	4	5	6
Price ... ea.	$1.25	1.30	1.50	1.60	1.70	2.00	3.00	4.30

Midland Sure Grip Roof Flashings

Galvanized or Copper


MIDLAND METAL MFG. CO.

The base or sheet is made from copper or Armco galvanized iron.

Sheet is extra large, allowing 6 inches for shingle room on upper side.

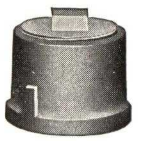
Angle flashings will fit any pitch of roof. The size is stamped on each flashing, which eliminates confusion in shipping and stock rooms.

The neck is made from lead, cast right on to the sheet. No rolled, crimped or soldered joints.

Packed one dozen to the carton, properly labeled to show contents.

Size In.	Size Sheet In.	Ship. Wt., Lbs. Each	Price per Doz.	Size In.	Size Sheet In.	Ship. Wt., Lbs. Each	Price per Doz.
1¼	10 x12½	2	**$8.00**	**3**	11⅝x14¼	3⅜	**$11.50**
1½	10¼x12¾	2⅛	**8.00**	**4**	12¾x15½	4	**12.00**
2	10⅞x13⅜	2½	**10.00**	**5**	13¾x16¾	5	**17.00**
2½	11⅝x14¼	3	**11.00**	**6**	14⅞x18	6	**30.00**

No. 4 Asco Trap Screw Ferrules

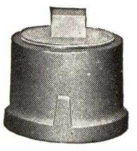


Has standard weight iron body, fitted with heavy I.P. size brass plug. Available in the following sizes:

2 Inch with 1½-Inch Plug.
3 Inch with 2½-Inch Plug.
4 Inch with 3-Inch Plug.
5 Inch with 3½-Inch Plug.
6 Inch with 3½-Inch Plug.
8 Inch with 3½-Inch Plug.

Asco Standard Pattern Cleanouts

Iron Body—Brass Plug

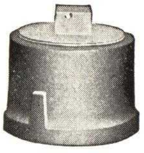


Furnished with heavy high square head plugs.

Has small opening—will not admit test plug.

No.	112	113	114	115	115	116	116	118	118
Size ... inches	2	3	4	5	5	6	6	8	8
Brass Plug ... inches	1½	2½	3	3½	4	3½	4	3½	4
Weight ... pounds	1¼	2¼	3¼	5½	6	7¼	8	9¾	10

Asco Extra Heavy Pattern Cleanouts



A full opening cleanout which fits extra heavy soil pipe only.

Furnished regularly with high square, hollow head and heavy pattern brass plugs.

Full opening will admit test plug.

No.	122	123	124	125	126	128	1210
Size ... inches	2	3	4	5	6	8	10
Brass Plug ... inches	2	2½	3½	4½	5	7	6
Weight ... pounds	2	2½	4½	6	8	11	14

No. E-4353 McDonald Cast Iron Body Trap Screw Ferrules

Suitable for calking into hubs of standard or extra heavy soil pipe. With brass plug or brass flanged cover.

Plug or flanged cover of the 2-inch size is threaded for 1½-inch iron pipe; the 4-inch size is threaded for 3½-inch iron pipe permitting use of a 4-inch test plug.

Sizes: 2 and 4 inches.

No. 245 Blake Extra Heavy Cleanouts

With Iron Pipe Size Heavy Brass Plug For Extra Heavy Pipe Only

The body and cover are of real heavy quality, and the opening is large enough to permit test plugs to be inserted.

Made in sizes from 2 to 8 inches.

With Raised Head

Size.........in.	2	3	4	5	6	8	10
Each..........	$.78	.96	1.18	2.64	3.30	9.24	13.20

With Countersunk Head

Size.........in.	2	3	4	5	6	8	10
Each..........	$.26	1.06	1.30	2.94	3.70	9.84	14.20

No. 255 Blake Standard Cleanouts

Full Opening

Opening admits test plugs. Fits standard or extra heavy soil pipe.

Body.........inches	2	3	4	5	6	8	10	12
Regular........each	$.46	.70	.86	2.00	2.60	7.20	12.00	..
Countersunk...each	$.54	.80	.98	2.30	3.00	7.80	13.50	..
Plug..........inches	2	2½	3½	5	6	8	10	12

No. L215 Brass Plugs

This plug is not as deep as the regular steam plug, but it has 5 or 6 threads, all I.P. sizes and therefore makes up tight.

Size......in.	1	1¼	1½	2	2½	3	3½	4	5	6
Each.......	$.16	.22	.24	.32	.48	.66	.88	1.10	2.00	3.30
Weight...oz.	2	3½	4	6	7	12	14	18	*2¾	*5

*Pounds.

No. E-4352 McDonald Threaded Cast Iron Ferrules

Threaded on inside of one end, the other end is calked into soil pipe.

Size Iron Pipe Thread......inches	1¼	1½
Size to Calk...............inches	2	2

Plate E4314

Union Ferrules

Plate E4314 Straight

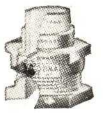
Size In.	Price, Each: Iron Body with Brass Nut and Collar	Price, Each: All Brass
2x1¼	$.90	$1.30
2x1½	1.10	1.50

Plate E4315 Eighth Bend

Size In.	Price, Each: Iron Body with Brass Nut and Collar	Price, Each: All Brass
2x1¼	$1.10	$1.70
2x1½	1 30	1.90

Plate E4315

No. E-4316 McDonald Union Couplings



For connecting wrought iron pipe to lead pipe. The lead waste pipe is slipped through the collar and nut, then flanged.

Furnished with iron body with brass nut and collar.

Available in the following sizes: 1¼x1¼ and and 1½x1½ inches.

Standard Brass Ferrules

No. 12 Straight

No. 17 Straight

No. 14 Tapered

Straight

No.	Size Inches	Wt. Oz.	Each
12	2 x2 x4	16	$.28
16	3 x3 x4¼	28	.53
17	4 x4 x4	32	.53
18	4 x4 x4½	36	.57
19	4⅛x4⅛x4½	32	.53

Tapered

No.	Size Inches	Wt. Oz.	Each
13	2x1¾x4	16	$.28
14	2x1½x4	16	.28
15	2x1¼x4	16	.28
..	....	..	...
..	....	..	...

Extra Heavy Brass Ferrules

No. 6 Straight

No. 2 Tapered

Straight

No.	Size Inches	Wt. Oz.	Each
5	4 x4 x4½	40	$.65
8	4⅜x4⅜x4¾	40	.71
.	....	..	...
.	....	..	...
.	....	..	...
.	....	..	...

Tapered

No.	Size Inches	Wt. Oz.	Each
1	2x2 x4½	20	$.36
2	2x1½x4½	20	.36
3	2x1¼x4½	20	.36
4	3x3 x4¼	32	.53
6	4x4 x4¾	40	.71
7	4x4 x4½	45	.80

Brass Ferrules

No. **8660**, Eighth Bend and No. **8666**, Quarter Bend available in sizes 2 and 4 inches.

Furnished for standard or extra heavy pipe.

No. E-4351 McDonald Plain Cast Iron Drive Ferrules

Designed to drive inside of lead waste pipe or lead bends, making a combination lead ferrule or bend for calking into soil pipe.

Size...................inches	2	4
Length................inches	3	3¼

Cast Iron Soil Pipe

5-Foot Lengths

No. SP-1, Single Hub

Size........in.	2	3	4	5	6	8	10	12	15
Std.....per ft.	$.30	.38	.46	.66	.80	1.50	2.50	3.60	5.60
Ex.Hvy.per ft.	$.42	.66	.80	1.10	1.36	2.00	3.60	5.00	8.00

No. SP-2, Double Hub

Size........in.	2	3	4	5	6	8	10	12	15
Std.....per ft.	$.32	.41	.50	.72	.88	1.70	2.70	4.00	6.20
Ex.Hvy.per ft.	.45	.70	.86	1.16	1.46	2.28	4.00	5.60	8.80

The 1½-inch pipe and fittings use same prices as 2-inch.

Approximate Weight Pounds per Foot

Single Hub

Size..........in.	2	3	4	5	6	8	10	12	15
Standard.....lb.	19	26	35	45	55	90	125	170	225
Medium......lb.	21	31	45	57	72	110	160	200	275
Extra Heavy.lb.	25	45	60	75	95	150	215	270	375

Double Hub

Size..........in.	2	3	4	5	6	8	10	12	15
Standard.....lb.	20	27	37	47	58	95	130	180	240
Medium......lb.	22	32	47	59	75	115	165	210	290
Extra Heavy.lb.	26	47	63	78	100	157	225	285	395

Approximate Weight Pounds of Soil Pipe Fittings

Standard and Medium

Size..................in.	2	3	4	5	6	8	10	12
Quarter Bends.........lb.	4	8	11	15	18	35	65	90
Eighth Bends.........lb.	3½	6	8½	12	15	28	50	70
*Quarter or Eighth Bends..lb.	8	13	18	21	25	...	...	...
Long Sweeps..........lb.	7	12	16	20	24	50	80	110
Tees, San Tees and Ys.lb.	7	12	16	23	30	60	100	140
Dbl.San Tees & Dbl.Ys lb.	10	15	22	30	40	75	120	160
Tapped Tees and San Tapped Tees............lb.	6	8	10	14	17	...	...	...
Combination Y and Eighth Bends...............lb.	8	14	21	28	36	...	...	...
Increasers.............lb.	..	6	7	10	12	25	45	60
Reducers..............lb.	..	5	6	8	9	16	30	40
Double Hubs..........lb.	4	5	8	10	12	25	40	50
Plugs.................lb.	1	2	3	4	5	12	18	26
Traps, Plain..........lb.	7	14	20	25	40	80	140	200
Traps, Single Hub Vent lb.	10	15	25	30	44	90	150	220
Traps, Dbl. Hub Vent. .lb.	12	20	30	40	50	100	160	240
45° Offsets:								
To Offset 8 Inches...lb.	8	11	17	20	25	40	...	...
To Offset 12 Inches..lb.	9	14	20	25	31	...	...	...
To Offset 16 Inches..lb.	10	17	23	30	37	...	...	...

Extra Heavy

Size..................in.	2	3	4	5	6	8	10	12	15
Quarter Bends.........lb.	6	10	15	19	24	50	78	111	169
Eighth Bends.........lb.	5	8	12	15	18	40	61	87	129
*Quarter or Eighth Bends..lb.	10	18	24	30	36	...	...	...	...
Long Sweeps..........lb.	8	16	22	28	34	67	103	141	212
Tees, San Tees and Ys.lb.	8	16	23	30	36	80	125	175	250
Dbl.San Tees & Dbl. Ys.lb.	12	21	30	38	48	100	150	200	300
Tapped Tees and San Tapped Tees............lb.	8	12	15	18	21	...	...	...	...
Combination Y and Eighth Bends...............lb.	10	20	29	38	50	...	...	...	...
Increasers.............lb.	..	9	10	15	16	35	55	75	90
Reducers..............lb.	..	6	7	11	12	21	35	50	65
Double Hubs..........lb.	5	8	11	13	15	35	50	67	91
Plugs.................lb.	2	3	5	6	8	15	23	33	50
Traps, Plain..........lb.	9	18	28	36	48	100	175	250	400
Traps, Single Hub Vent.lb.	12	22	32	43	57	110	185	275	435
Traps, Double Hub Vent lb.	15	27	40	50	66	120	200	300	465
45° Offsets:									
To Offset 8 Inches...lb.	10	16	21	27	32	...	...	...	...
To Offset 12 Inches..lb.	12	20	26	33	39	...	...	...	...
To Offset 16 Inches..lb.	14	24	31	39	46	...	...	...	...

*18 inches long.

To determine the right or left-hand inlet or outlet in bends, branches and offsets, place them with the hub facing toward you and with spigot lower than hub. On traps, place in regular position with the hub end nearest you.

Long quarter bends are measured from the inside of hub nearest spigot to end of spigot. Other bends are measured from end of spigot to nearest point on inside base of hub. Long T's, Y's, etc., are measured from the base of the hub on main to the end of spigot.

Quarter Bends

No. SP-3

Size Inches	Each Std.	Each Ex. Hy.	Size Inches	Each Std.	Each Ex. Hy.
2	$.40	$.55	8	$4.00	$5.00
3	.55	.70	10	5.90	6.50
4	.80	1.00	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.45	1.85	..	.....	.....

Fifth Bends

No. SP-4

Size In.	Standard Each	Ex. Hy. Each	Size In.	Standard Each	Ex. Hy. Each
2	$.45	$.60	8	$4.00	$5.00
3	.80	1.00	10	5.90	6.50
4	.80	1.00	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.30	1.55	..	.....	.....

Sixth Bends

No. SP-5

Size Inches	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.40	$.45	8	$4.00	$5.00
3	.60	.75	10	5.90	6.50
4	.75	.90	12	8.65	10.80
5	1.05	1.25	15	16.80	21.00
6	1.30	1.55	..	.....	.....

Eighth Bends

No. SP-6

Size In.	Standard Each	Ex. Hy. Each	Size In.	Standard Each	Ex. Hy. Each
2	$.35	$.40	8	$4.00	$5.00
3	.45	.55	10	5.90	6.50
4	.65	.80	12	8.65	10.80
5	.80	1.00	15	16.80	21.00
6	1.05	1.25	..	.....	.....

Sixteenth Bends

No. SP-7

Size Inches	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.35	$.40	8	$4.00	$5.00
3	.50	.70	10	5.90	6.50
4	.60	.75	12	8.65	10.80
5	.80	1.00	15	16.80	21.00
6	1.00	1.25	..	.....	.....

Double Hub Bends

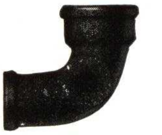
No. SP-8
Quarter

No. SP-9
Eighth

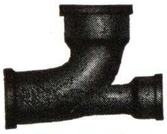
No. SP-10
Sixteenth

Size In.	Standard Each	Ex. Hvy. Each
2	$.75	$.90
3	.95	1.15
4	1.20	1.40
5	1.85	2.30
6	2.45	3.05

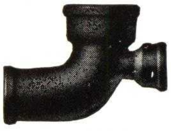
Quarter Bends With Inlet



No. SP-11
With R. H. or
L. H. Side Inlet



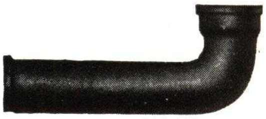
No. SP-12
With Low
Heel Inlet



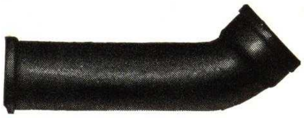
No. SP-13
With High
Heel Inlet

Size In.	Size Inlet In.	Each Std.	Each Ex. Hy.	Size Inches	Size Inlet Inches	Each Std.	Each Ex. Hy.
2	2	$1.25	$1.55	5	2	$3.70	$4.60
3	2	1.25	1.55	5	3	3.70	4.60
3	3	1.25	1.55	5	4	3.70	4.60
4	2	1.25	1.55	6	2	4.30	5.40
4	3	3.10	3.85	6	3	4.30	5.40
4	4	3.10	3.85	6	4	4.30	5.40

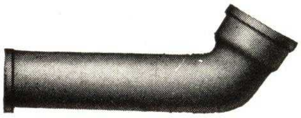
Long Bends



No. SP-14
Long Quarter Bends



No. SP-15
Long Eighth Bends

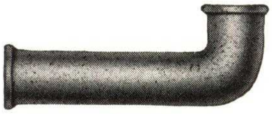


No. SP-16
Long Sixth Bends

Size In.	Length in Clear Inches	Standard Each	Extra Heavy Each	Size In.	Length in Clear Inches	Standard Each	Extra Heavy Each
2	12	$.90	$1.10	4	36	$4.90	$6.15
2	18	1.05	1.30	5	12	3.70	4.60
2	24	1.50	1.85	5	18	4.30	5.40
2	30	2.25	2.75	5	24	4.90	6.15
3	12	1.50	1.85	5	36	5.25	6.55
3	18	1.85	2.30	6	12	4.30	5.40
3	24	2.25	2.75	6	18	5.00	6.15
4	12	1.25	1.55	6	24	5.50	6.90
4	18	1.50	1.85	6	30	6.50	8.10
4	24	2.75	3.40	6	36	7.40	9.20
4	30	3.85	4.80	8	18	7.50	10.00

Long Quarter Bends

With Double Spigot

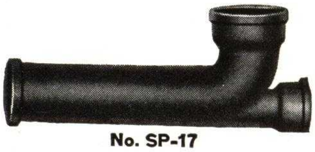


J-1336

Size Inches	Price, Each Standard	Price, Each Extra Heavy	Size Inches	Price, Each Standard	Price, Each Extra Heavy
2x12	$.90	$1.10	3x24	$2.20	$2.75
2x18	1.05	1.30	4x12	1.25	1.55
2x24	1.50	1.85	4x18	1.50	1.85
3x12	1.50	1.85	4x24	2.75	3.40
3x18	1.85	2.30	....	....	....

Long Quarter Bends

With 2-Inch Low Heel Inlet

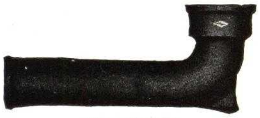


No. SP-17

Size In.	Standard Each	Extra Heavy Each	Length in Clear Inches
4	$2.50	$2.85	18

Long Quarter Bends

With Foot Rest



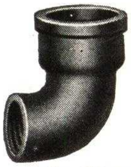
No. SP-19

For all long bends with foot rest add to list of regular bend as follows.

Size In.	Add Each	Size In.	Add Each	Size In.	Add Each
2	$.50	4	$1.00	6	$1.50
3	.75	5	1.25	..	....

Tapped Quarter Bends

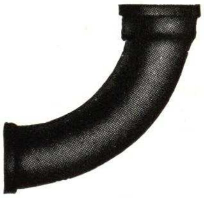
Tapped 1¼, 1½ or 2 Inches



No. SP-34

Size..........................inches 4
Price, Standard..................each $.70
" Extra Heavy................ " .85

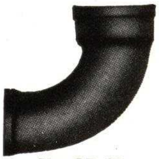
Long Sweep Quarter Bends



No. SP-27

Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each
2	$.75	$.90	8	$6.00	$7.50
3	.95	1.15	10	8.00	10.00
4	1.25	1.55	12	14.50	18.00
5	1.70	2.00	15	28.00	35.00
6	2.75	3.40	..	.....	.....

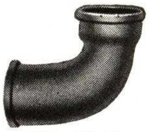
Short Sweep Quarter Bends



No. SP-28

Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each
2	$.60	$.75	6	$2.50	$3.10
3	.90	1.10	8	4.80	6.00
4	1.15	1.40	10	6.80	8.50
5	1.55	1.85	..	....	....

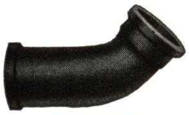
Reducing Quarter Bends



No. SP-36

Size Inches	Standard Each	Extra Heavy Each
3x2	$.90	$1.10
4x2	1.25	1.50
4x3	1.30	1.60
5x4	1.90	2.20
6x4	2.40	3.00

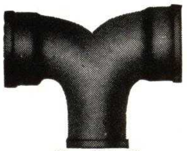
Reducing Eighth Bends



No. SP-37

Size Inches	Standard Each	Extra Heavy Each
3x2	$.90	$1.10
4x3	1.30	1.60
5x4	1.75	2.20
6x4	2.40	3.00

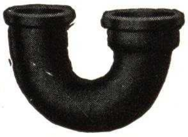
Double Quarter Bends



No. SP-40

Size Inches	Standard Each	Ex. Hvy. Each
2x2	$1.50	$1.85
3x2	2.45	3.05
3x3	2.55	3.20
4x2	2.80	3.45
4x3	2.80	3.45
4x4	2.80	3.45

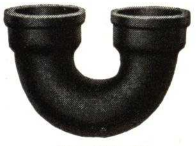
Single Hub Return Bends



No. SP-41

Size Inches	Standard Each	Ex. Hvy. Each
2	$1.25	$1.55
3	1.50	1.85
4	1.70	2.00
5	2.45	3.05
6	3.10	3.85
8	7.00	7.75

Double Hub Return Bends



No. SP-42

Size Inches	Standard Each	Extra Heavy Each
2	$1.35	$1.70
3	1.60	2.00
4	1.75	2.20
5	2.75	3.40
6	3.40	4.25
8	7.40	8.25

T Branches
Plain

No. SP-52

Size In.	Price, Each Std.	Extra Heavy	Size In.	Price, Each Std.	Extra Heavy	Size In.	Price Each Std.	Extra Heavy
2x2	$.55	$.75	5x3	$1.50	$1.85	6x6	$2.40	$3.00
3x2	.85	1.05	5x4	1.60	2.00	8	6.00	9.00
3x3	.85	1.10	5x5	2.00	2.50	10	10.80	15.10
4x2	.85	1.10	6x2	1.80	2.15	12	15.10	19.40
4x3	1.15	1.45	6x3	1.80	2.15	15	33.60	42.00
4x4	1.20	1.50	6x4	1.80	2.15	...	.....	.....
5x2	1.20	1.45	6x5	2.00	2.45	...	.....	.....

T Branches
With Right-hand Side Inlet
Add Extra to Above List

No. SP-53

Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets	Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets
2	$1.00	$1.50	5	$2.00	$3.00
3	1.25	2.00	6	2.50	3.50
4	1.50	2.50	.	....	....

When ordering specify whether wanted with right or left-hand side inlet.

Tapped T Branches
Tapped 1¼, 1½ or 2 Inches
Regular Pattern

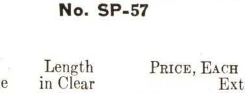
No. SP-54

Size Inches	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.70	$.85	5	$1.60	$2.00
3	.85	1.10	6	2.50	3.10
4	1.00	1.25	.	....	....

Long Pattern

Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each
2x12	$1.45	$1.80	3x30	$3.80	$4.75	5x18	$4.35	$5.40
2x18	2.10	2.60	3x36	4.30	5.35	5x24	5.25	6.55
2x24	2.35	2.90	4x12	3.05	3.80	5x30	5.90	7.40
2x30	2.70	3.35	4x15	3.30	4.10	5x36	6.75	8.45
2x36	2.90	3.65	4x18	3.55	4.45	6x18	4.95	6.15
3x12	1.70	2.10	4x24	4.35	5.40	6x24	6.20	7.70
3x18	2.75	3.40	4x30	4.90	6.15	6x30	7.00	8.75
3x24	3.20	4.00	4x36	5.50	6.90	6x36	7.90	9.85

Long T Branches



No. SP-57

Size In.	Length in Clear In.	Price, Each Std.	Extra Heavy
2	12	$1.20	$1.50
2	18	2.00	2.45
2	24	2.25	2.75
2	30	2.45	3.05
2	36	2.70	3.35
3	12	1.45	1.80
3	18	2.60	3.25
3	24	3.10	3.85
3	30	3.55	4.45
3	36	4.05	5.05
4	12	2.80	3.50
4	18	3.50	4.30
4	24	4.10	5.05
4	30	4.65	5.85
4	36	5.35	6.60

Size In.	Length in Clear In.	Price, Each Std.	Extra Heavy
5	18	$4.20	$5.25
5	24	4.95	6.15
5	30	5.70	7.10
5	36	6.60	8.15
6	18	4.90	6.15
6	24	5.80	7.25
6	30	6.80	8.45
6	36	7.70	9.55

Tee Branches, All Hub Ends

No. SP-56

Size Inches	Std. Each	Ex. Hvy. Each
2	$2.25	$2.75
3	3.45	4.30
4	4.65	5.85
5	5.65	7.05
6	7.35	9.20

Sanitary T Branches

No. SP-59

Size In.	Std. Each	Ex. Hvy. Each	Size In.	Std. Each	Ex. Hvy. Each
2x2	$.55	$.75	5x5	$2.00	$2.50
3x2	.85	1.05	6x2	1.80	2.15
3x3	.85	1.10	6x3	1.80	2.15
3x4	1.70	2.15	6x4	1.80	2.15
4x2	.85	1.10	6x5	2.00	2.45
4x3	1.15	1.45	6x6	2.40	3.00
4x4	1.20	1.50	8	6.00	9.00
5x2	1.20	1.45	10	10.80	15.10
5x3	1.50	1.85	12	15.10	19.40
5x4	1.60	2.00	15	33.60	42.00

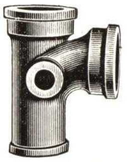
Sanitary T Branches
With Side Inlet
Add Extra to Above List

No. SP-60
With Right-Hand Inlet

Size Inlets In.	Right or Left Inlets	Brass Trap Screws Incl. Inlets
2	$1.00	$1.50
3	1.25	2.00
4	1.50	2.50
5	2.00	3.00
6	2.50	3.50

When ordering specify whether wanted with right or left-hand side inlet.

Sanitary Tee Branches
With Tapped Inlets



No. SP-61

Sanitary soil pipe tee branch with tapped side inlet for 1½ or 2-inch iron pipe.

	Std.		Ex. Hvy.	
Size..........inches	3	4	3	4
1 Side Inlet....each	$2.10	$2.45	$2.35	$2.75
2 Side Inlets...each	3.35	3.70	3.60	4.00

Tapped Sanitary T Branches

No. SP-62

Size Inches	Thread Inches	Each Standard	Extra Heavy
2	1¼, 1½, 2	$.75	$.90
3	1¼, 1½, 2	.95	1.20
4	1¼, 1½, 2	1.25	1.55
5	1¼, 1½, 2	1.85	2.30
6	1¼, 1½, 2	2.95	3.70

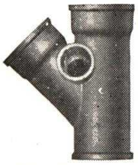
Y and Half Y Branches

No. SP-73 Y Branch

No. SP-74 Half Y

Size In.	Price, Each Std.	Extra Heavy	Size In.	Price, Each Std.	Extra Heavy	Size In.	Price, Each Std.	Extra Heavy
2x2	$.55	$.75	5x3	$1.50	$1.85	6x6	$2.40	$3.00
3x2	.85	1.05	5x4	1.60	2.00	8	6.00	9.00
3x3	.85	1.10	5x5	2.00	2.50	10	10.80	15.10
4x2	.85	1.10	6x2	1.80	2.15	12	15.10	19.40
4x3	1.15	1.45	6x3	1.80	2.15	15	33.60	42.00
4x4	1.20	1.50	6x4	1.80	2.15	...	.....	.....
5x2	1.20	1.45	6x5	2.00	2.45	...	.....	.....

With Side Inlet
Add Extra to Above List

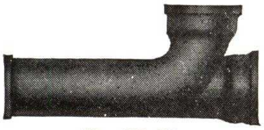


Y Branch
No. SP-75

Size Inlet Inches	Right or Left Inlet Only	Brass Trap Screws Incl. Inlets
2	$1.00	$1.50
3	1.25	2.00
4	1.50	2.50
5	2.00	3.00
6	2.50	3.50

Half Y Branch
No. SP-76

Long Sanitary T Branches


No. SP-64

Size Inches	Length in Clear Inches	Std. Each	Ex. Hvy. Each
2	12	$1.20	$1.50
2	18	2.00	2.45
2	24	2.25	2.75
2	30	2.45	3.05
2	36	2.70	3.35
3	12	1.45	1.80
3	18	2.60	3.25
3	24	3.10	3.85
3	30	3.55	4.45
3	36	$4.05	$5.05
4	12	2.80	3.50
4	18	3.50	4.30
4	24	4.10	5.05
4	30	4.65	5.85
4	36	5.35	6.60
5	18	4.20	5.25
5	24	4.95	6.15
5	30	5.70	7.10
5	36	6.60	8.15
6	18	4.90	6.15
6	24	5.80	7.25
6	30	6.80	8.45
6	36	7.70	9.55
8	36	9.00	....

Long Y Branches

No. SP-78

Size Inches	Length in Clear In.	Price, Each Std.	Extra Heavy
2	12	$1.20	$1.50
2	18	2.00	2.45
2	24	2.25	2.75
2	30	2.45	3.05
2	36	2.70	3.35
3	12	1.45	1.80
3	18	2.60	3.25
3	24	$3.10	$3.85
3	30	3.55	4.45
3	36	4.05	5.05
4	12	2.80	3.50
4	18	3.50	4.30
4	24	4.10	5.05
4	30	4.65	5.85
4	36	5.35	6.60
5	18	4.20	5.25
5	24	4.95	6.15
5	30	5.70	7.10
5	36	6.60	8.15
6	18	4.90	6.15
6	24	5.80	7.25
6	30	6.80	8.45
6	36	7.70	9.55

Special Reducing Sanitary T and Y Branches

No. SP-63 Sanitary T Branch

No. SP-79 YBranch

Size Inches	Standard Each	Extra Heavy Each
3x2x2	$2.20	$2.50
3x2x3	2.20	2.50
3x2x4	2.95	3.70
3x4x3	2.95	3.70
4x2x2	2.95	3.70
4x2x4	2.95	3.70
4x3x4	2.95	3.70
5x3x4	3.80	4.75
5x4x4	3.80	4.75
5x4x5	3.80	4.75
6x3x4	4.60	5.75
6x4x4	4.60	5.75
6x4x5	4.60	5.75
6x4x6	4.60	5.75
6x5x4	4.60	5.75
6x5x5	4.60	5.75
6x5x6	4.60	5.75

Inverted Y Branches

No. SP-77

Size In.	Std. Each	Ex. Hvy. Each
2x2	$1.00	$1.25
3x2	1.40	1.85
3x3	1.40	1.85
4x2	1.70	2.15
4x3	1.70	2.15
4x4	1.70	2.15
5x2	2.45	3.05
5x4	$3.10	$3.85
5x5	3.40	4.60
6x2	3.70	4.60
6x3	3.70	4.60
6x4	4.95	6.15
6x5	4.95	6.15
6x6	4.95	6.15

Inverted Y Branches

Tapped for Iron Pipe

No. SP-80

Size In.	Threads Inches	Std. Each	Ex. Hvy Each
2	1¼, 1½, 2	$1.40	$1.70
3	1¼, 1½, 2	2.00	2.45
4	1¼, 1½, 2	2.20	2.75
5	1¼, 1½, 2	2.80	3.50
6	1¼, 1½, 2	3.40	4.25

Double Y Branches

No. SP-90

Size In.	Std. Each	Extra Heavy Each
2x2	$1.25	$1.55
3x2	1.65	2.00
3x3	1.65	2.00
4x2	1.80	2.15
4x3	1.80	2.15
4x4	1.80	2.15
5x2	4.95	6.15
5x3	4.95	6.15
5x4	4.95	6.15
5x 5	$4.95	$6.15
6x 2	6.15	7.70
6x 3	6.15	7.70
6x 4	6.15	7.70
6x 5	6.15	7.70
6x 6	6.15	7.70
8x 8	9.00	13.50
10x10	16.20	22.65
12x10	22.70	29.15

With Side Inlet

No. SP-91

Size Inlet In.	Extras, Add to List, Each Inlet Only	Brass Trap Screw Incl. Inlet
2	$1.00	$1.50
3	1.25	2.00
4	1.50	2.50
5	$2.00	$3.00
6	2.50	3.50

Double Half Y Branches

Plain

No. SP-92

Size In.	Price, Each Std.	Extra Heavy
2x2	$1.25	$1.55
3x2	1.65	2.00
3x3	1.65	2.00
4x2	1.80	2.15
4x3	1.80	2.15
4x4	1.80	2.15
5x2	4.95	6.15
5x3	4.95	6.15
5x4	4.95	6.15
5x 5	$4.95	$6.15
6x 2	6.15	7.70
6x 3	6.15	7.70
6x 4	6.15	7.70
6x 5	6.15	7.70
6x 6	6.15	7.70
8x 8	9.00	13.50
10x10	16.20	22.65
12x10	22.70	29.15

With Side Inlet

Add Extra to Above List

Size Inlet In.	Inlet Only	Brass Trap Screw Incl. Inlet
2	$1.00	$1.50
3	1.25	2.00
4	1.50	2.50
5	$2.00	$3.00
6	2.50	3.50

No. SP-93

Long Double Y Branches

No. SP-94

Size Inches	Price, Each Standard	Ex. Hy.
2x2x12	$1.60	$2.00
2x2x18	2.75	3.45
2x2x24	3.00	3.75
4x2x18	4.25	5.30
4x2x24	4.85	6.05
4x4x18	4.65	5.80
4x4x24	5.25	6.55
4x4x30	5.90	7.35
4x4x36	6.50	8.10
5x4x18	5.40	6.75
5x4x24	6.10	7.65
5x4x30	6 90	8.60
5x4x36	7.70	9.65
6x4x18	6.10	7.65
6x4x24	7.00	8.75
6x4x30	7.95	9.95
6x4x36	8.85	11.05

Combination Y and Eighth Bends

No. SP-101

Size In.	Standard Each	Extra Heavy Each	Size In.	Standard Each	Extra Heavy Each	Size In.	Standard Each	Extra Heavy Each
2x2	$1.05	$1.30	4x4	$1.70	$2.15	6x2	$5.55	$6.90
3x2	1.70	2.15	5x2	3.70	4.60	6x3	5.55	6.90
3x3	1.70	2.15	5x3	3.70	4.60	6x4	5.55	6.90
4x2	1.70	2.15	5x4	3.70	4.60	6x5	5.55	6.90
4x3	1.70	2.15	5x5	3.70	4.60	6x6	5.55	6.90

Long Combination Y and Eighth Bends

No. SP-104

Size In.	Lgth. In.	Std. Each	Ex. Hy. Each
2x2	24	$2.60	$3.25
3x3	24	3.90	4.85
3x3	36	5.05	6.30
4x2	18	3.60	4.50
4x2	24	4.30	5.35
4x3	18	4.00	5.00
4x3	24	4.70	5.90
4x3	36	6.10	7.60
4x4	18	4.45	5.55
4x4	24	5.30	6.60
4x4	30	6.05	7.55
4x4	36	6.70	8.40
5x4	24	5.95	7.45
5x4	30	6.90	8.60
5x4	36	7.75	9.70
6x4	30	7.70	9.60
6x4	36	8.60	10.75
6x5	36	9.00	11.25
6x6	36	9.00	11.25

Double Combination Y and Eighth Bends

No. S. P. 109

Size..........inches	3x2	4x4	5x4	5x5	6x4
Standard........each	$2.80	$3.30	$5.50	$5.50	$8.30
Extra Heavy....each	3.50	4.10	6.90	6.90	10.35

Double Inverted Y Branches

No. SP-81

Size In.	Price, Each Standard	Price, Each Ex. Hy.
2x2	$2.45	$3.05
3x2	3.10	3.85
3x3	3.10	3.85
4x2	3.70	4.60
4x3	3.70	4.60
4x4	3.70	4.60

Upright Combination Y Branches

No. SP-111

Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Price, Each Std.	Price, Each Extra Heavy	Size In.	Extras, Add to List, Each I. P. Tap-pings	Extras, Add to List, Each Hub Inlets
2x2	$1.85	$2.30	5x4	$4.90	$6.15	3/8-1	$.60	....
3x2	1.85	2.30	5x5	5.50	6.90	1¼, 1½	1.25	....
3x3	1.85	2.30	6x2	4.90	6.15	2	1.25	$1.00
4x2	1.85	2.30	6x3	4.90	6.15	2½	1.50	....
4x3	3.10	3.85	6x4	5.50	6.90	3	1.50	1.25
4x4	3.10	3.85	6x5	6.15	7.70	4	....	1.50
5x2	3.70	4.60	6x6	7.35	9.20	5	....	2.00
5x3	4.35	5.40	...	....	....	6	....	2.50

Crosses

Plain

No. SP-119

Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each
2x2	$1.25	$1.55	5x5	$4.95	$6.15
3x2	1.65	2.00	6x2	6.15	7.70
3x3	1.65	2.00	6x3	6.15	7.70
4x2	1.80	2.15	6x4	6.15	7.70
4x3	1.80	2.15	6x5	6.15	7.70
4x4	1.80	2.15	6x6	6.15	7.70
5x2	4.95	6.15	8	9.00	13.50
5x3	4.95	6.15	10	16.20	22.65
5x4	4.95	6.15	12x10	22.70	29.15

Crosses

With Side Inlet

Add Extra to Above List

No. SP-120

Size Inlet In.	Extra for Side Inlet Each	Size Inlet In.	Extra for Side Inlet Each
2	$1.00	5	$2.00
3	1.25	6	2.50
4	1.50	.	....

Tapped Crosses

For Iron Pipe

No. SP-123

Size Inches	Standard Each	Extra Heavy Each	Thread Inches
2	$1.15	$1.40	1¼, 1½, 2
3	1.25	1.55	1¼, 1½, 2
4	1.40	1.70	1¼, 1½, 2
5	2.25	2.80	1¼, 1½, 2
6	3.45	4.30	1¼, 1½, 2

Tapped Sanitary Crosses

No. SP-127

Size Inches	Thread Inches	Standard Each	Ex. Hvy. Each
2	1¼, 1½, 2	$1.25	$1.55
3	1¼, 1½, 2	1.50	1.85
4	1¼, 1½, 2	1.75	2.15
5	1¼, 1½, 2	2.75	3.40
6	1¼, 1½, 2	4.10	5.10

Sanitary Crosses

No. SP-124

Size In.	Price, Each Std.	Price, Each Ex. Hy.	Size In.	Price, Each Std.	Price, Each Ex. Hy.
2x2	$1.25	$1.55	5x 5	$4.95	$6.15
3x2	1.65	2.00	6x 2	6.15	7.70
3x3	1.65	2.00	6x 3	6.15	7.70
4x2	1.80	2.15	6x 4	6.15	7.70
4x3	1.80	2.15	6x 5	6.15	7.70
4x4	1.80	2.15	6x 6	6.15	7.70
5x2	4.95	6.15	8	9.00	13.50
5x3	4.95	6.15	10	16.20	22.65
5x4	4.95	6.15	12x10	22.70	29.15

Sanitary Crosses

With Side Inlet

Add Extra to Above List

No. SP-125

Size Inlet In.	Inlets Each	Size Inlet In.	Inlets Each
2	$1.00	5	$2.00
3	1.25	6	2.50
4	1.50	..	.....

Long Sanitary Crosses

No. SP-126

Size Inches	Price, Each Standard	Price, Each Extra Heavy
2x2x12	$1.60	$2.00
2x2x18	2.75	3.45
2x2x24	3.00	3.75
4x2x18	4.25	5.30
4x2x24	4.85	6.05
4x4x18	4.65	5.80
4x4x24	5.25	6.55
4x4x30	5.90	7.35
4x4x36	6.50	8.10
5x4x18	5.40	6.75
5x4x24	6.10	7.65
5x4x30	6.90	8.60
5x4x36	7.70	9.65
6x4x18	6.10	7.65
6x4x24	7.00	8.75
6x4x30	7.95	9.95
6x4x36	8.85	11.05

Plugs

No. SP-145

Size Inches	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.25	$.30	8	$1.20	$1.50
3	.40	.45	10	2.60	3.25
4	.45	.60	12	3.45	4.30
5	.60	.75	15	5.60	7.00
6	.75	.90	..	....	....

Sleeves

No. SP-146

Size Inches	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.60	$.75	8	$2.80	$3.50
3	.75	.90	10	4.85	6.20
4	.75	.90	12	8.65	10.80
5	1.25	1.55	15	17.85	22.30
6	1.85	2.30	..	.....	.....

Thimbles

No. SP-148

Size Inches	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.60	$.75	6	$1.85	$2.30
3	.75	.90	8	2.80	3.50
4	.75	.90	10	4.85	6.20
5	1.25	1.55	12	8.65	10.80

Offsets

Regular Offset

No. SP-133

Eighth Bend Offset

No. SP-139

Size In.	Offset In.	Std. Each	Ex. Hy. Each	Size In.	Offset In.	Std. Each	Ex. Hy. Each	Size In.	Offset In.	Std. Each	Ex. Hy. Each
2	2	$.60	$.75	3	22	$3.10	$3.85	5	18	$6.10	$7.60
2	4	.60	.75	3	24	3.70	4.60	5	20	6.35	7.95
2	6	.75	.90	4	2	1.00	1.25	5	22	6.70	8.35
2	8	.75	.90	4	4	1.00	1.25	5	24	6.90	8.65
2	10	1.00	1.25	4	6	1.10	1.40	6	2	3.15	3.95
2	12	1.15	1.40	4	8	1.25	1.55	6	4	3.45	4.30
2	14	1.25	1.55	4	10	1.50	1.85	6	6	3.45	4.30
2	16	1.35	1.70	4	12	1.60	2.00	6	8	3.80	4.75
2	18	1.70	2.15	4	14	1.90	2.45	6	10	4.50	5.60
2	20	2.00	2.50	4	16	2.00	3.40	6	12	5.10	6.35
2	22	2.20	2.75	4	18	2.30	3.55	6	14	6.40	8.00
2	24	2.45	3.05	4	20	2.60	4.30	6	16	6.90	8.60
3	2	.95	1.15	4	22	3.10	4.60	6	18	7.25	9.05
3	4	1.00	1.25	4	24	3.70	5.05	6	20	7.65	9.55
3	6	1.10	1.40	5	2	2.50	3.15	6	22	8.10	10.15
3	8	1.25	1.55	5	4	2.50	3.15	6	24	8.50	10.60
3	10	1.50	1.85	5	6	2.85	3.55	6	26	8.45	10.55
3	12	1.60	2.00	5	8	3.15	3.95	8	4	8.00	11.00
3	14	1.90	2.30	5	10	3.35	4.20	8	6	9.60	12.00
3	16	2.10	2.60	5	12	3.70	4.65	8	8	10.40	13.00
3	18	2.30	2.90	5	14	5.25	6.55	.	..	.....	.....
3	20	2.75	3.40	5	16	5.50	6.90	.	..	.....	.....

For odd lengths use next highest list.

Single Hubs

No. SP-140

Size In.	Standard Each	Extra Heavy Each	Size In.	Standard Each	Extra Heavy Each
2	$.50	$.60	6	$1.85	$2.45
3	.65	.90	8	2.50	3.50
4	.70	.90	10	3.90	4.85
5	1.25	1.55	..	....	....

Double Hubs

No. SP-141

Size In.	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2	$.40	$.45	8	$2.80	$3.50
3	.50	.75	10	4.85	6.20
4	.60	.75	12	8.65	10.80
5	1.00	1.25	15	17.85	22.30
6	1.25	1.55	..	.....	.....

Reducers

No. SP-142

Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each
3x2	$.40	$.50	8x4	$2.80	$3.50	12x8	$8.65	$10.80
4x2	.40	.50	8x5	2.80	3.50	12x10	8.65	10.80
4x3	.50	.65	8x6	2.80	3.50	15x4	17.85	22.30
5x2	.60	.75	10x4	4.85	6.20	15x5	17.85	22.30
5x3	.60	.75	10x5	4.85	6.20	15x6	17.85	22.30
5x4	.60	.75	10x6	4.85	6.20	15x8	17.85	22.30
6x2	.80	1.00	10x8	4.85	6.20	15x10	17.85	22.30
6x3	.80	1.00	12x4	8.65	10.80	15x12	17.85	22.30
6x4	.80	1.00	12x5	8.65	10.80	.....	.....	.....
6x5	.80	1.00	12x6	8.65	10.80	.....	.....	.....

Increasers

Hub end to govern price.

No. SP-166

Size In.	Std. Each	Extra Heavy Each	Size In.	Std. Each	Extra Heavy Each
2x3	$.90	$1.10	5x10	$6.40	$8.00
2x4	1.25	1.55	6x10	6.40	8.00
3x4	1.25	1.55	8x10	6.40	8.00
2x5	1.60	2.00	4x12	9.20	11.50
3x5	1.60	2.00	5x12	9.20	11.50
4x5	1.60	2.00	6x12	9.20	11.50
2x6	1.85	2.30	8x12	9.20	11.50
3x6	1.85	2.30	10x12	9.20	11.50
4x6	1.85	2.30	4x15	16.00	20.00
5x6	1.85	2.30	5x15	16.00	20.00
4x8	4.00	5.00	6x15	16.00	20.00
5x8	4.00	5.00	8x15	16.00	20.00
6x8	4.00	5.00	10x15	16.00	20.00
4x10	6.40	8.00	12x15	16.00	20.00

Tapped Increasers

No. SP-167

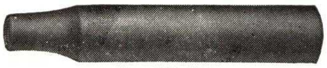
Tapped Iron Pipe Inches	Hub Inlet Inches	Std. Each	Extra Heavy Each
1¼ or 1½	2	$.75	$.90
1¼, 1½ or 2	3	1.40	1.70
1¼, 1½ or 2	4	1.50	1.85
1¼, 1½ or 2	5	2.10	2.45
1¼, 1½ or 2	6	2.40	3.00
2½ or 3	4	1.85	2.20
2½ or 3	5	2.45	2.80
2½ or 3	6	2.75	3.35
3½ or 4	5	2.85	3.20
3½ or 4	6	3.15	3.75
5	6	3.60	4.20

Spigot Long Increasers

No. SP-169

Size In.	Length In.	Std. Each	Ex. Hy. Each	Size In.	Length In.	Std. Each	Ex. Hy. Each
2x3	30	$1.60	$2.00	4x5	24	$2.00	$2.45
2x4	24	1.25	1.55	4x5	30	2.00	2.45
2x4	30	1.65	2.00	4x5	36	3.70	4.60
2x4	36	2.00	2.45	4x6	24	3.70	4.60
2x4	48	2.50	3.10	4x6	30	3.70	4.60
3x4	12	1.25	1.55	4x6	36	4.30	5.40
3x4	24	2.00	2.45	4x6	48	4.95	6.15
3x4	36	2.35	2.90	5x6	12	1.95	2.45
3x5	24	2.00	2.45	5x6	30	5.45	6.00
4x5	12	1.60	2.00	5x7	48	12.30	15.40

Tapped Long Increasers



No. SP-170

Tapped 1¼, 1½ or 2 Inches

Size In.	Lgth. In.	Std. Each	Ex. Hvy. Each	Size In.	Lgth. In.	Std. Each	Ex. Hvy. Each
2½	30	$2.65	$3.00	4	30	$2.65	$3.00
3	24	2.25	2.55	4	36	3.00	3.45
3	30	2.65	3.00	4	48	3.50	4.10
3	36	3.00	3.45	5	24	3.00	3.45
4	24	2.25	2.55	..	..	....	....
Tapped 2½ or 3 Inches				**Tapped 4 Inches**			
4	24	$3.00	$3.30	5	30	$4.50	$4.95
4	30	3.40	3.75	6	30	6.20	7.10
4	36	3.75	4.20	..	..	....	....
4	48	4.50	5.10	..	..	....	....

Short Tapped Increasers

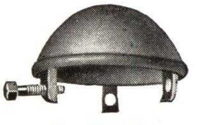
No. SP-168

Tapped I.P. Inches	Hub In.	Std. Each	Extra Heavy Each	Tapped I.P. Inches	Hub In.	Std. Each	Extra Heavy Each
1¼, 1½	2	$.60	$.75	2½, 3	5	$1.60	$1.90
1¼, 1½, 2	3	.90	1.10	2½, 3	6	2.20	2.65
1¼, 1½, 2	4	1.00	1.25	3½, 4	5	2.00	2.30
1¼, 1½, 2	5	1.25	1.55	3½, 4	6	2.60	3.05
1¼, 1½, 2	6	1.85	2.30	5	6	3.05	3.50
2½, 3	4	1.35	1.60	.....	.	....	....

Vent Caps

No. SP-150
With Spigot

Size Inches	With Spigot Each	With Set-Screw Each
2	$.60	$.60
3	.70	.65
4	.90	.85
5	1.85	1.25
6	2.00	1.55



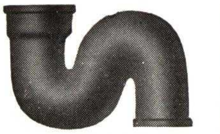
No. SP-151
With Set-Screw

Trap Covers

No. SP-185

Size In.	Price, Each Standard	Price, Each Extra Heavy
2	$.25	$.30
3	.30	.35
4	.40	.50
5	.45	.55
6	.55	.65
8	.90	1.05
10	1.30	1.60

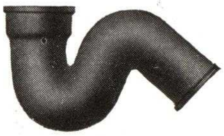
Plain S Traps



No. SP 188

Size Inches	Standard Each	Extra Heavy Each
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Plain Three-Quarter S Traps

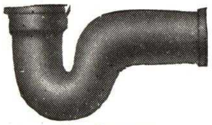


No. SP-189

Size Inches	Standard Each	Extra Heavy Each
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Plain P Traps

Made of cast iron.



No. SP-190

Size Inches	Standard Each	Extra Heavy Each
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

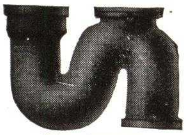
Traps with Top Vent

No. SP-191 S Trap

No. SP-193 P Trap

Size Inches	Each Std.	Each Ex. Hy.	Size Inches	Each Std.	Each Ex. Hy.
2x2	$1.20	$1.50	5x4	$4.55	$5.70
3x2	1.35	1.70	5x5	4.55	5.70
3x3	1.35	1.70	6x2	5.25	6.50
4x2	2.20	2.75	6x3	5.25	6.50
4x3	2.20	2.75	6x4	5.25	6.50
4x4	2.20	2.75	6x5	5.25	6.50
5x2	4.55	5.70	6x6	5.25	6.50
5x3	4.55	5.70	...	....	....

S Traps with Hand Hole and Cover



No. SP-194

Size In.	Price, Each Std.	Price, Each Ex. Hy.
2	$1.25	$1.55
3	1.85	2.30
4	2.50	3.10
5	4.95	6.15
6	5.55	6.90
8	10.75	13.75

Three-Quarter S Traps
With Handhole and Cover

No. SP-195

Size Inches	Standard Each	Extra Heavy Each
2	$1.25	$1.55
3	1.85	2.30
4	2.50	3.10
5	4.95	6.15
6	5.55	6.90
8	10.75	13.75

P Traps with Hand Hole and Cover

No. SP-196

Size In.	Standard Each	Ex. Hvy. Each
2	$1.25	$1.55
3	1.85	2.30
4	2.50	3.10
5	4.95	6.15
6	5.55	6.90
8	10.75	13.75

Plain Running Traps

No. SP 209

Size In.	Standard Each	Ex. Hy. Each
2	$.90	$1.10
3	1.15	1.40
4	1.50	1.85
5	4.30	5.40
6	4.95	6.15
8	10.00	13.00

Running Traps

No. SP-211
With Hub Vent

No. SP-212
With Double Hub Vent

Size Inches	Std. Each	Ex. Hy. Each
2x2	$1.20	$1.50
3x2	1.35	1.70
3x3	1.35	1.70
4x2	2.20	2.75
4x3	2.20	2.75
4x4	2.20	2.75
5x2	4.55	5.70
5x3	4.55	5.70
5x4	4.55	5.70
5x5	4.55	5.70
6x2	5.25	6.50
6x3	5.25	6.50
6x4	5.25	6.50
6x5	5.25	6.50
6x6	5.25	6.50
8x4	12.00	15.00
8x6	12.00	15.00
8x8	15.00	18.00
10x4	21.60	27.00
10x6	21.60	27.00
10x8	21.60	27.00
12x6	32.00	40.00
12x8	32.00	40.00
15x6	75.00	90.00
15x8	75.00	90.00

Size Inches	Std. Each	Ex. Hy. Each
2x2	$1.60	$2.00
3x2	1.80	2.25
3x3	1.80	2.25
4x2	2.60	3.25
4x3	2.60	3.25
4x4	2.60	3.25
5x2	4.80	6.00
5x3	4.80	6.00
5x4	4.80	6.00
5x5	4.80	6.00
6x2	5.60	7.00
6x3	5.60	7.00
6x4	5.60	7.00
6x5	5.60	7.00
6x6	5.60	7.00
8x4	13.60	17.00
8x6	13.60	17.00
8x8	17.00	20.00
10x4	24.00	30.00
10x6	24.00	30.00
10x8	24.00	30.00
12x6	35.00	43.00
12x8	35.00	43.00
15x6	85.00	100.00
15x8	85.00	100.00

Running Traps with Hand Hole and Cover

No. SP-210

Size In.	Standard Each	Ex. Hvy. Each
2	$1.25	$1.55
3	1.85	2.30
4	2.50	3.10
5	4.95	6.15
6	5.55	6.90
8	10.75	13.75

Kansas City Running Traps

No. SP-212 KC
With Double Hub Vent

Made in one size only, similar to the regular running trap with double hub vent, except that the spigot is 2 inches longer.

4x4-Inch, Extra Heavy...each **$3.60**

No. SP-227 Deep Seal P Traps

Wisconsin Pattern

Extra Heavy

Depth of seal, 5 inches.

Size................inches	2	3	4	5	6
No. SP-227...........each	$1.25	1.75	2.50	3.50	4.75

No. SP-228 Deep Seal Running Trap with Vent

Wisconsin Pattern

Extra Heavy

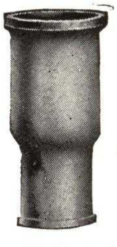
One vent on hub side of trap.

Depth of seal, 5 inches.

Size Inches	2-Inch Vent Each	4-Inch Vent Each
2	$1.60	....
3	2.00	....
4	....	$2.80
5	....	4.40
6	....	5.50

Sisson Insertable Joints

No. SP253



Size Inches	Std. Each	Ex. Hy. Each
2	$1.40	$1.50
3	1.50	1.70
4	1.80	2.00
5	2.10	2.30
6	2.60	2.80
8	9.00	10.00

With this joint a satisfactory connection can be made when a leak is discovered in a pipe or fitting already connected; or if a new fixture is to be connected with a line of pipes already in.

To install, cut out of soil pipe the length of fitting required to insert plus 11½ inches for this joint. Slip the lead ring over the pipe above and push the joint up as far as possible and drop this joint down. The lead ring will drop into joint and rest upon shoulders. Insert packing.

Soil Pipe T Saddles and T Saddle Hubs

No. SP-159
T Saddles

No. SP-160
T Saddle Hubs

Size Inches	Price, Each Standard	Extra Heavy	Size Inches	Price, Each Standard	Extra Heavy
2x2	$.75	$.95	5x4	$1.00	$1.25
3x2	.80	1.00	5x5	1.00	1.25
3x3	.80	1.00	6x2	1.00	1.25
4x2	.80	1.00	6x3	1.00	1.25
4x3	.90	1.10	6x4	1.00	1.25
4x4	.90	1.10	6x5	1.05	1.30
5x2	.90	1.10	6x6	1.15	1.40
5x3	.95	1.15	...	....	....

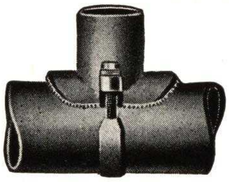
Y and Half Y Soil Pipe Saddle Hubs

No. SP-161
Y Hubs

No. SP-162
Half Y Hubs

Size Inches	Standard Each	Extra Heavy Each	Size Inches	Standard Each	Extra Heavy Each
2x2	$.80	$1.00	5x4	$1.05	$1.30
3x2	.90	1.10	5x5	1.05	1.30
3x3	.90	1.10	6x2	1.15	1.40
4x2	.90	1.10	6x3	1.15	1.40
4x3	.95	1.15	6x4	1.15	1.40
4x4	.95	1.15	6x5	1.25	1.55
5x2	.95	1.15	6x6	1.25	1.55
5x3	1.00	1.25	...	....	....

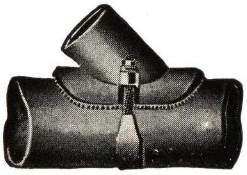
Connolly T Saddle Hubs



No. SP 177

Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each
2x2	$.75	$.95	4x4	$.90	$1.10	6x2	$1.00	$1.25
3x2	.80	1.00	5x2	.90	1.10	6x3	1.00	1.25
3x3	.80	1.00	5x3	.95	1.15	6x4	1.00	1.25
4x2	.80	1.00	5x4	1.00	1.25	6x5	1.05	1.30
4x3	.90	1.10	5x5	1.00	1.25	6x6	1.15	1.40

Connolly Y Saddle Hubs



No. SP 178

Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each	Size In.	Std. Each	Ex. Hy. Each
2x2	$.80	$1.00	4x4	$.95	$1.15	6x2	$1.15	$1.40
3x2	.90	1.10	5x2	.95	1.15	6x3	1.15	1.40
3x3	.90	1.10	5x3	1.00	1.25	6x4	1.15	1.40
4x2	.90	1.10	5x4	1.05	1.30	6x5	1.25	1.55
4x3	.95	1.15	5x5	1.05	1.30	6x6	1.25	1.55

Bar Strainers

No.SP-186

Size In.	Each
2	$.10
3	.15
4	.20
5	.25
6	.30

Soil Pipe Hooks

No. SP-187

Size In.	Each
2	$.20
3	.25
4	.30
5	.35
6	.40

Plain Pipe Rests

No. SP-182

Size, In.	Std. Each	Ex. Hy. Each
2	$.30	$.40
3	.40	.45
4	.40	.45
5	.75	.90
6	.95	1.15
8	1.75	2.25
10	2.15	3.25

Tapped Pipe Rests

No. SP-183

Size......in.	4	6
Std......ea.	$1.00	$1.45
Ex. Hy...ea.	1.15	....

Soil Pipe Straps

Size Pipe Inches	Size Stock Inches	Each
2	¼x1¼	$.60
3	¼x1¼	.70
4	¼x1½	.80
5	¼x1½	.90
6	¼x1½	1.15

Made of steel. Other sizes made to order.

Fits-'em-all Repair Covers for Test Tees

No. L-515

A handy repair cover for test tees of any make, as it fits them all. Inserted and made tight in a few minutes. Saves time and expense. It is not necessary to order any particular cover for certain make of tee.

Size............................inches	2	4	6
Price............................each	$.66	.88	1.10

No. F-1841 McDonald Base Stack Fittings

McDONALD DUBUQUE

With Right-Hand Clean-Out Opening

Fitted with regular 3½-inch plug or flanged cover.

Clean-out opening is high enough to clear the floor and arranged so that a test plug can be inserted either way.

When ordering, specify whether wanted with right or left-hand clean-out opening.

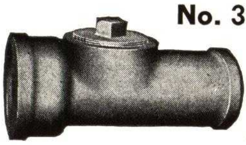
No. 495 Blake Test Tees

This test tee will take a 90° testing plug. A test tee can be calked in on each story and a test made on each floor separately.

Made in sizes from 2 to 8 inches. Made to suit standard or extra heavy.

Size..............inches	2	3	4	5	6	8
No. 495, with Brass Screw Plug Cover........each	**$1.40**	**1.80**	**2.10**	**5.50**	**6.70**	**16.50**

No. 37 Asco Cast Iron Test Tees



Regular Pattern
Standard or Extra Heavy

With square head brass plug. Will admit test plug.

Size........................inches	2	3	4	5	6
I.P. Opening................inches	2	3	3½	4½	6
Weight......................pounds	7	10½	15	22	25

Cast Iron Soil Pipe Fittings
Cleanout Tees

No. SP-242
Trap Screw on Main

Size Inches	Each Std.	Each Ex. Hy.
2	**$1.50**	**$1.85**
3	**1.95**	**2.45**
4	**2.45**	**3.05**
5	**4.30**	**5.40**
6	**4.90**	**6.15**

No. SP-243
Trap Screw on Branch

Size Inches	Each Std.	Each Ex. Hy.
2	**$1.50**	**$1.85**
3	**1.70**	**2.15**
4	**1.70**	**2.15**
5	**3.25**	**4.00**
6	**3.70**	**4.60**

Cleanout Y's

No. SP-244
Trap Screw on Main

Size Inches	Each Std.	Each Ex. Hy
2	**$1.50**	**$1.85**
3	**1.95**	**2.45**
4	**2.45**	**3.05**
5	**4.30**	**5.40**
6	**4.95**	**6.15**

No. SP-245
Trap Screw on Branch

Size Inches	Each Std.	Each Ex. Hy.
2	**$1.50**	**$1.85**
3	**1.95**	**2.45**
4	**2.45**	**3.05**
5	**4.30**	**5.40**
6	**4.95**	**6.15**

No. SP-246

Combination Y and Eighth Bend
Trap Screw on Main

Size Inches	Each Std.	Each Ex. Hy.
2	**$1.85**	**$2.30**
3	**2.45**	**3.05**
4	**3.10**	**3.85**
5	**4.95**	**6.15**
6	**6.15**	**7.70**

No. F-1833 McDonald Extra Heavy Cast Iron Test Tees

McDONALD
DUBUQUE

Available with brass screw plug or flanged cover. Cover can be furnished with countersunk head if desired.

Size..........inches	2	4
Threaded for Screw Plug Size...inches	2	3½

No. 214 Plain Closet Bends with Slip Collars

Size Inches	Each	Size Inches	Each
3x4x16	....	**4x6x12**	....
4x4x12	....	**4x6x15**	....
4x4x14	....	**4x6x16**	....
4x4x15	....	**4x6x18**	....
4x4x18	....	**4x10x18**	....
4x4x24	....	......	....

Tapped Closet Bends with Slip Collars

No. 215
Tapped Left Hand

No. 216
Tapped Right Hand

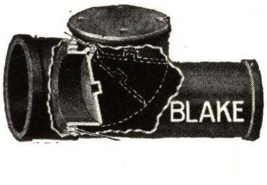
Closet bends tapped 1½ or 2 inches on the side with 2½ inch slip collars.

Size Inches	Each	Size Inches	Each
3x4x16	....	**4x6x12**	....
4x4x12	....	**4x6x15**	....
4x4x14	....	**4x6x16**	....
4x4x15	....	**4x6x18**	....
4x4x18	....	**4x10x18**	....
4x4x24	....	......	....

No. 80 Blake Palmer Type Back Water Traps

Made to fit either extra heavy or standard soil pipe. Gas and watertight cover secured with brass bolts. All brass flapper type valve accurately machined and fastened with brass screws.

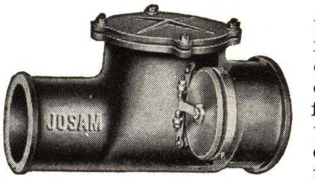
Full water way and brass gates and seats.



Pipe Size In.	Each	Length Overall Inches	Laying Length Inches	Wt. Lb.
2	**$6.00**	11	8 9/16	11
3	**7.00**	13	11 13/16	17
4	**7.50**	14½	11⅝	22
5	**13.00**	16	13⅛	33
6	**15.00**	17¼	14½	42
8	**36.50**	20½	16¾	58
10	**70.00**	....	....	130
12	**95.00**	....	....	200

Series 1170 Josam Open Seat Side-Swing Backwater Sewer Valves

With Bolted Cover

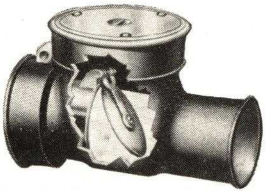


Cast iron open seat backwater sewer valve with hub inlet, bolted down cleanout cover and brass side swing disc type super-sensitive flap which swings wide open to full waterway when required and closes tightly at the slightest back flow.

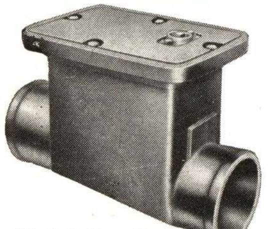
Optional at added cost: galvanized body and cover; threaded brass cleanout cover; hub connection for use with tile sewer pipe; flanged ends.

No....................	**1173**	**1174**	**1175**	**1776**	**1178**
Each..................	**$15.00**	**21.00**	**31.20**	**36.00**	**60.00**
Outlet..........inches	3	4	5	6	8

Wade Backwater and Lockout Valves



No. W-4200 Automatic Valve

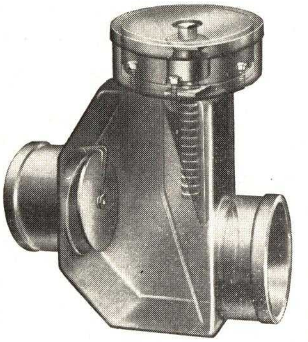


No. W-4500 Gate Valve

Recommended for use in domestic and industrial buildings where basements are subject to floods caused by backwater from sewer. Affords protection to equipment and furnishings.

Automatic valve has free seat revolving discs easily renewable. **Gate** valve gives positive action when closed and is of non-rising stem type.

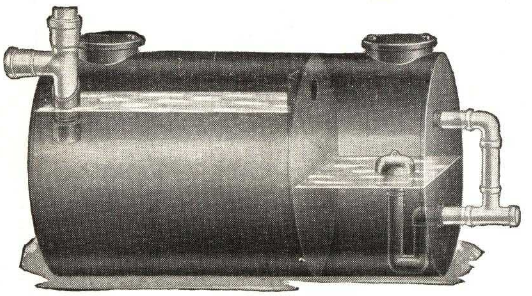
No. 109 Boosey Automatic and Manually Operated Drainage Control Valves



The rain water lines and stacks to fixtures above basement are open at all times for free flow of water to street sewer and only the basement drainage lines to which are connected the seepage tile drains, area-way drains, floor drains, pump sump and basement fixtures are valve controlled by control valve, which, when closed, prevents sewage back flowing through basement drainage branches.

In.	3	4	5	6
ea.	$60.96	60.96	95.25	95.25

San-Equip Siphon Septic Tanks



An improved septic tank with built-in syphon discharge unit. Syphon discharges at intervals in sufficient volume to distribute effluent equally over entire filter field. Periods of rest between discharges improve absorption and speed final disposal.

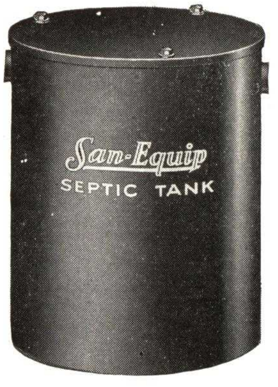
Equipped with improved top intake and full partition separating treatment and syphon chambers. Volume of syphon discharge can be varied on order to meet special requirements. Nos. 705 and 707 take 4-inch sanitary T at intake; No. 710, 6-inch. All outlets take 4-inch pipe.

Made of copper-bearing steel, rustproofed inside and out with a heavy hot-dip coating of mineral asphalt. Syphon is cast iron.

No.	705	707	710
Total Capacity . . . gallons	500	750	1000
Septic Chamber Capacity	320	480	690
Syphon Discharge . . . gallons	80	120	160
Dimensions . . . inches	52x60	52x90	52x120
No. of Gage	14	14	12
Shipping Weight . . . pounds	495	595	1025

San-Equip Septic Tanks

Vertical Type



Provides satisfactory service for use where modern plumbing would otherwise be impossible.

The intake and outlet opening baffles are designed to direct the flow of sewage within the tank to take full advantage of the entire working capacity. The resulting longer travel insures more thorough treatment and a clearer effluent.

Made of 14-gage copper-bearing steel, rustproofed inside and out with a heavy hot-dip coating of mineral asphalt. Openings take 4-inch pipe.

No.	802	803	805
Working Capacity . . . gallons	200	300	500
Diameter . . . inches	38	46	52
Depth . . . inches	48	48	60
Shipping Weight . . . pounds	220	285	390

A 300-gallon vertical tank is the minimum size recommended for permanent installation and for year around use.

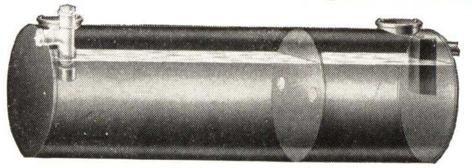
San-Equip Master Septic Tanks

San-Equip
MASTER SEPTIC TANK

A horizontal type tank that provides safe, dependable disposal of sewage for homes and camps. Improved design assures more thorough digestion of solids, easier installation and freedom from service interruptions. Made of 14-gage copper-bearing steel, rust-proofed inside and out with a heavy hot-dip coating of mineral asphalt. Openings take 4-inch pipe.

No.	903	904
Working Capacity . . . gallons	250	350
Dimensions . . . inches	48x34x44	66x34x44
Shipping Weight . . . pounds	280	360

San-Equip Horizontal Septic Tanks



Provides dependable sewage disposal service for factories, schools, parks, etc. Horizontal design. Made of copper-bearing steel, rustproofed with mineral asphalt. No. 905 has 4-inch pipe openings; Nos. 910 and 915 tanks, 6-inch; larger size tanks, 8-inch.

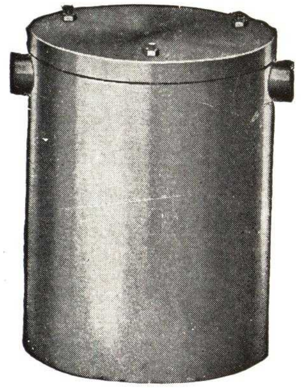
Furnished in sizes from 500 gallons up.

No.	Working Capacity Gallons	No. of People			Dimensions	Gage	Ship. Weight Pounds
		Factory	School	*Home			
905	500	35	40	10 to 20	52″x5′	14	425
910	1000	70	80	20 to 40	52″x10′	12	925
915	1500	105	120	40 to 75	52″x15′	12	1300
920	2000	140	165	75 to 100	68″x11′8″	3/16″	2400
925	2500	175	210	100 to 125	68″x14′7″	3/16″	2850
930	3000	200	250	120 to 150	68″x17′6″	3/16″	3300
935	3500	235	290	140 to 175	68″x20′5″	3/16″	3750
940	4000	270	330	160 to 200	68″x23′4″	3/16″	4200

*Lower figures in home ratings column are recommended by health officials for most satisfactory service. In no instance, even for temporary use, should maximum ratings be exceeded.

Prices upon request.

Pekin Steel Septic Tanks



A durable septic tank designed for homes and small institutions.

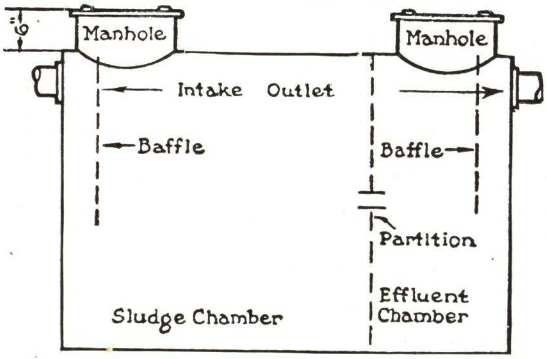
Made of quality No. 14 gage steel throughout. All seams are electrically welded.

The tank, in addition to being made of quality steel, is highly coated inside and outside with a high grade of rustproof preservative, which insures the tank against acids, moisture, etc.

No.	Rating, No. People Home	School	Factory	Diameter Inches	Height Inches	Capacity Gallons	Weight Pounds
1	4	7	6	30½	48	150	165
2	7	14	11	36	52	230	225
3	10	21	16	48	48	375	275
4	20	35	30	52	60	500	375

Prices upon application.

Pekin Steel Horizontal Septic Tanks



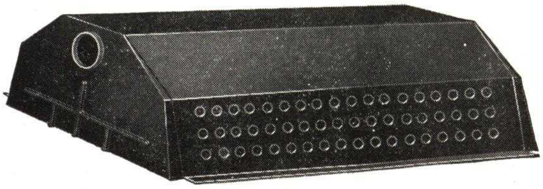
Where large capacities are necessary, Pekin Horizontal Tanks are recommended.

Nos. 104, 105, 106, 107, and 108 are made of No. 12 gage steel; Nos. 109, 110, and 111, of 3/16-inch material.

No.	Rating, No. People Hotel	Factory	School	Diameter Inches	Length Inches	Capacity Gallons	Weight Pounds
104	25	35	40	48	72	515	600
105	37	50	60	48	96	750	700
106	50	60	65	60	96	1150	925
107	62	75	85	60	120	1400	1050
108	75	90	100	60	144	1725	1200
109	100	135	165	65	144	2000	2350
110	125	170	210	65	180	2500	2750
111	145	190	240	65	216	2900	3150

Prices upon application.

No. 180 San-Equip Drain Pools

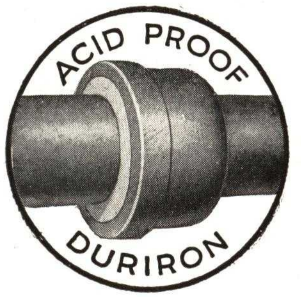


A prefabricated seepage pool that increases the capacity of septic tank disposal fields. One or more drain pools installed at end of tile lines provide additional storage in case of temporary overloads.

Pool has perforated sides and open bottom. Made of 14-gage copper-bearing steel, rustproofed inside and out with a heavy hot-dip coating of mineral asphalt. Base area, 66x32 inches; height, 16½ inches.

Shipping weight, 95 pounds.

Duriron Acid-Proof Drain Pipe and Fittings



Duriron is a high silicon cast metal alloy, not lined, coated or glazed. It is very hard, resists abrasion and scouring, and is of the same quality and properties throughout.

Duriron Acid-Proof Drain Pipe is installed the same as extra heavy cast iron soil pipe except pure asbestos is used for packing under the lead calking instead of hemp or oakum. It is interchangeable with extra heavy cast iron soil pipe and has the same working dimensions. It is installed as easily as extra heavy cast iron soil pipe, standard hangers are satisfactory and it is not necessary to provide drip pans or make other provisions for anticipated failure of the joints.

SEE THIS NAME
DURIRON
ON EVERY PIECE

Duriron lines can be laid in concrete or installed in the walls without fear of leakage. Duriron is not affected by cinder concrete where the acid formed by the sulphur and moisture will ordinarily destroy iron pipe.

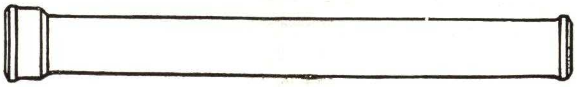
Duriron pipe can be painted if that is desired, but it is not necessary as the natural silvery color of Duriron blends with any color scheme.

Duriron pipe will handle acids and acid wastes with no more effect on it than pure water has on cast or wrought iron pipe.

Duriron pipe and fittings up to 3 inches are packed in wire-bound crates properly marked, making it easier to handle and keeping it free from dirt until ready for installation. Shipping weights are reduced as well.

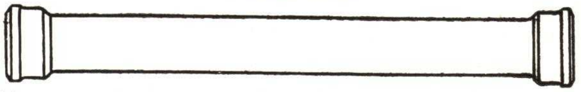
Duriron Drain Pipe

Single Hub



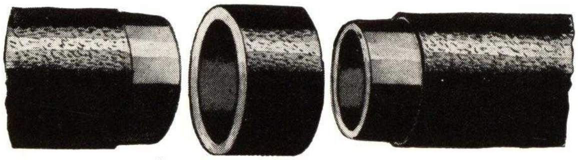
Size Inches	Per Piece	Working Length Feet	Length Overall	Weight Pounds
1½	**$7.90**	3	3′2⅜″	19
2	**14.65**	4	4′2½″	30
3	**25.10**	5	5′2¾″	56
4	**34.60**	5	5′3″	91
5	**55.30**	5	5′3″	105
6	**58.10**	5	5′3″	135
8	**105.00**	5	5′3⅜″	230

Double Hub



Size Inches	Per Piece	Working Length Feet	Length Overall	Weight Pounds
1½	**$9.45**	2′9⅝″	3′2⅜″	19
2	**16.55**	3′9½″	4′2½″	32
3	**28.90**	4′9¼″	5′2¾″	60
4	**38.85**	4′9″	5′3″	93
5	**57.00**	4′9″	5′3″	114
6	**61.75**	4′9″	5′3″	148
8	**118.00**	5′	5′6¾″	240

L-M Fiber Pipe and Fittings



Showing Tapered Sleeve Joints

Used for many industrial and commercial applications such as, disposal of salt brine from oil wells; downspouts; industrial drainage; irrigation; in construction work for sleeves in walls, floors and foundation forms before concrete is poured; sewage disposal and many other similar applications, wherever flow pipe is not subject to pressure or to continuous and sustained high temperatures.

Fiber pipe is dependable because the tapered sleeve joints are tight and strong. Uneven settlement of subgrade may cause deflection of the pipe but will not crack it, nor cause leakage at the joints or along the pipe.

Can be laid quickly and efficiently. One man can handle several sections of this lightweight pipe, and no special tools or hoisting equipment is required. Weighs about one-sixth as much as steel pipe and one-third as much as clay pipe. Does not break as easily as clay pipe; less care needed in handling before installation. It can be laid right in the trench, and several sections can be installed and securely joined in the time it ordinarily takes to connect a single threaded joint. The close fitting couplings, and the smooth inside surface of the pipe itself give a low friction loss.

Easily adapted to every irrigation problem. Adapter couplings are provided to make connections with any diameter of threaded iron pipe, soil pipe or sewer pipe. It fits in with any existing irrigation system and to any water supply. A single coupling provides an offset of one inch per foot and makes possible slight angular variation in the line without strain.

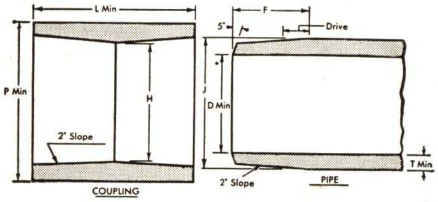
The taper sleeve joint consists of a coupling, accurately machined on the inside to match the 2 degree taper machined on the ends of each length of pipe. The coupling is driven onto the tapered end of the pipe by placing a block over the end of the coupling and giving it a few light blows with a sledge. The coupling seats firmly against the shoulder on the pipe providing a tight seal.

Fiber pipe may be cut, if necessary, with an ordinary handsaw and can be drilled or worked with ordinary woodworking tools.

Perforated fiber pipe does an excellent job of distribution through the evenly spaced perforation holes and the openings at the joints provided by the split-type coupling. These perforations are in the form of two rows of holes running along the pipe on the under side. The holes are about 5 inches apart and allow a free and unrestricted passage for excess moisture to enter the pipe. Ideally suited to every type of drainage problem such as, draining road beds, lawns, marginal land, for drains around foundation footings of houses, buildings and structures of every kind.

Fiber Pipe and Couplings

Taper Joint



Furnished in standard lengths of 5 feet; 4-inch pipe is also available in 8-foot lengths.

Flow Pipe

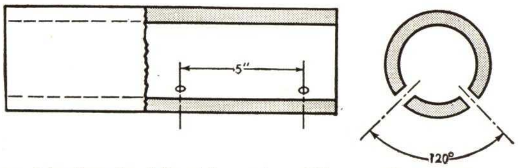
Size In.	*Per Foot	Dimensions, Inches D Min.	F	J	T Min.	Drive In.	Wt., Lb. per Ft.
3	....	3	1.69	3.448	.28	.28	1.7
4	....	4	1.94	4.493	.32	.28	2.7
5	....	5	1.94	5.726	.41	.28	4.5
6	....	6	1.94	6.782	.46	.28	5.8
8	....	8	2.48	9.110	.57	.28	10.0

*Including one coupling for each length of pipe.

Couplings

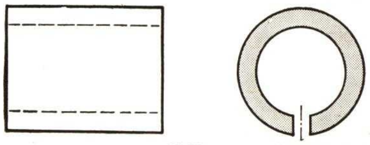
Size In.	Each	Dimensions, Inches H	L Min.	P Min.	Wt. Lb.
3	...	3.330	3.42	4.10	.8
4	...	4.357	3.92	5.33	1.4
5	...	5.592	3.92	6.72	2.2
6	...	6.646	3.92	7.80	2.9
8	...	8.935	5.00	10.31	5.0

Perforated Fiber Pipe



Size, 4 inches in 4-foot lengths. Wt. per foot, 2 lb.

Per Foot. . . . .



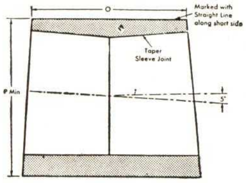
Split Couplings

For Perforated Fiber Pipe

Weight each, .75 lb.

Each. . . . .

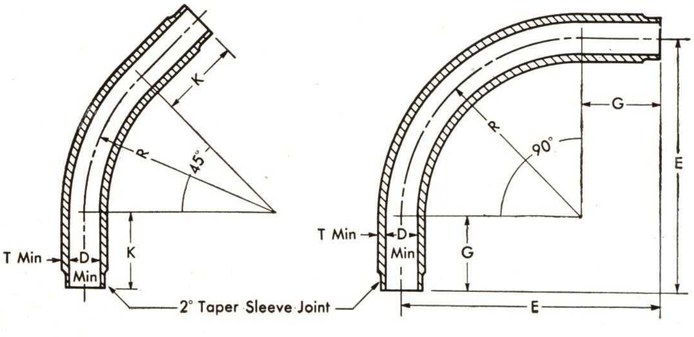
5-Degree Angle Couplings



The 5-degree angle coupling has many uses in laying fiber pipe when an offset, bends of less than 45 degrees, or long radius curves are required. Provides an offset of 1 inch per foot, and the use of a number of couplings and various lengths of pipe will provide for desired offset.

Pipe Size. . . . . inches	**3**	**4**	**5**	**6**	**8**
Each.	....	...	...	...	....
P Min. . . . . inches	4.1	5.33	6.72	7.80	10.31
O. inches	3.5	4	4	4	5
Weight. . . . . inches	.8	1.4	2.2	2.9	5

45 and 90-Degree Elbows



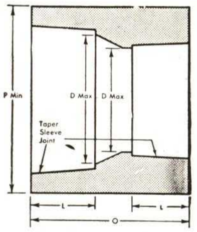
When ordering, specify size of pipe, angle, and radius of elbow.

Pipe Size. . . . . . in.	**3**	**4**	**5**	**6**	**†8**
*Each.	.....	....	....	....	.....
D Min. . . . . in.	3	4	5	6	8
T Min. . . . . in.	.28	.32	.41	.46	.57
R. . . . . in.	13,24,36	16,36	24,36	36	48
E. . . . . in.	21,32,38	24,38	32,36	36	.....
G. . . . . in.	8,8,2	8,2	8,0	0	.....
K. . . . . in.	8,8,8	8,8	8,8	8	8
Weight. . . . . lb.	9	14	22.5	29	50

*Includes one coupling with each elbow.
†Made in 45-degree angle only.

L-M Fiber Pipe and Fittings

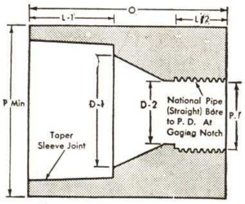
Reducing Adapters
One Size Fiber Pipe to Another

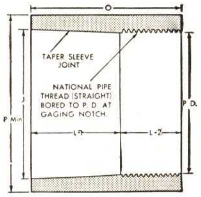

P Min
D Max
D Max
Taper Sleeve Joint
L
L
O

When ordering, be sure to specify size of both pipes.

Large End Dimension........in.	4	5	6	8
Each................................	....	....	....	....
P Min.........................in.	5.33	6.72	7.80	10.31
L..............................in.	2	2	2	2.5
O: **3**-In. Small End...........in.	4.75	5.25	5.75	7
4-In. Small End...........in.	....	5	5.5	6.75
5-In. Small End...........in.	....	....	5	6.5
6-In. Small End...........in.	....	....	....	6
D Max.........................in.	4.1	5.1	6.1	8.2
Weight........................lb.	1.8	2.8	3.7	6

Adapters
Fiber Pipe to Threaded Pipe


L-1
O
L-2
P Min
D-1
D-2
National Pipe (Straight) Bore to P. D. At Gaging Notch
P. T
Taper Sleeve Joint


O
TAPER SLEEVE JOINT
NATIONAL PIPE THREAD (STRAIGHT) BORED TO P. D. AT GAGING NOTCH
J
P Min
L-1
L-2
P. D.

Prices and Dimensions—Adapters to Same Size Threaded Pipe or Smaller

Fiber Pipe Size.....in.	3	4	5	6	8
Each..................	....	....	....	....	....
P Min..............in.	4.10	5.33	6.72	7.80	10.31
L-1...................in.	1.75	2.0	2.0	2.0	2.5
D-1..................in.	3.03	4.0	5.06	6.06	.....
J......................in.	3.448	4.493	5.726	6.782	9.110

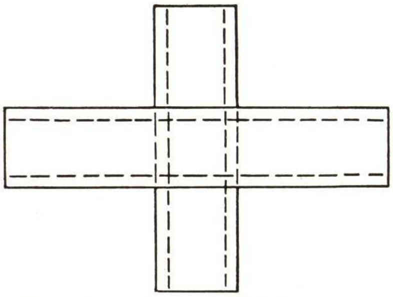
0 Dimensions, Inches

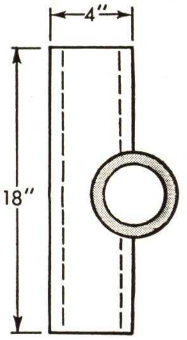
Fiber Pipe Size	Iron Pipe Size, Inches											
In.	1	1¼	1½	2	2½	3	3½	4	4½	5	6	8
3	4.25	4.25	4.0	4.0	4.0	3.0	....	....	....	...	...	....
4	5.0	5.0	4.75	4.75	4.5	4.25	4.0	3.375	....	...	...	....
5	5.25	5.25	5.37	5.5	5.25	5.0	4.5	4.37	4.25	3.5	...	....
6	6.5	6.5	6.25	6.0	5.75	5.5	5.25	4.87	4.75	4.5	3.5	....
8	....	....	....	....	....	....	....	....	....	...	...	4.25

Iron Pipe End Dimensions

Pipe Diam. Inches	Threads per Inch	L-2 Inches	D-2 Inches	Pipe Diam. Inches	Threads per Inch	L-2 Inches	D-2 Inches
1.24	11½	.75	1.05	**3.89**	8	1.25	3.5
1.58	11½	.75	1.4	**4.38**	8	1.375	4.
1.82	11½	.87	1.6	**4.88**	8	1.38	4.5
2.30	11½	1.00	2.	**5.45**	8	1.50	5.
2.76	8	1.25	2.5	**6.50**	8	1.50	6.
3.39	8	1.25	3.	**8.5**	8	1.75	8.

Cross Fittings
For Drainage Beds

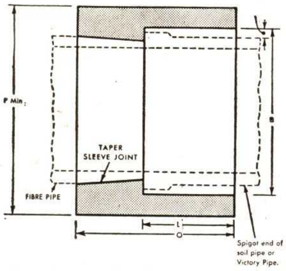




Pipe size, 4 inches. Weight, 6 pounds.

Each.. ....

Adapters
Fiber Pipe to Spigot End of Soil Pipe

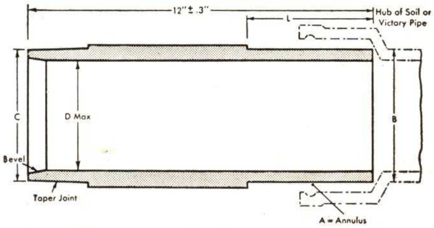

P Min
A
B
TAPER SLEEVE JOINT
FIBRE PIPE
L
O
Spigot end of soil pipe or Victory Pipe.

A=Annulus (May be packed, cemented, or hot poured to make a sealed joint).

When ordering, be sure to specify size of pipe.

Pipe Size..............in.	3	4	5	6	8
Each......................	....	....	....	....	....
P Min...................in.	5.12	6.875	7.72	8.1	10.31
B..........................in.	4.15	5.625	6.4	7.2	9.4
L..........................in.	2.5	2.75	2.75	3.5	3.5
O.........................in.	4.25	4.75	4.75	5	6
A: Soil Pipe...........in.	.33	.35	.45	.35	.38
Victory Pipe.......in.	.45	.47	.57	.47	.5
Weight..................lb.	1	1.8	2.8	3.7	6

Adapters
Fiber Pipe to Hub of Soil Pipe


12" ± .3"
L
Hub of Soil or Victory Pipe
C
D Max
B
Bevel
Taper Joint
A = Annulus

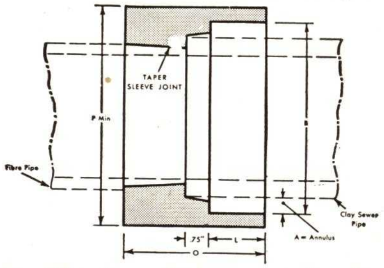
A=Annulus (May be packed, cemented, or hot poured to make a sealed joint).

Clay sewer pipe does not require this adapter. Fiber pipe fits directly into hub with ample annulus.

When ordering, be sure to specify size of pipe.

Pipe Size................in.	3	4	5	6	8
Each........................	....	...	....	....	....
D Max....................in.	3.07	3.80	4.85	6.12	8.20
B............................in.	3.45	4.40	5.40	6.60	8.70
L............................in.	4	4.5	4.5	5	5.5
C............................in.	....	4	5	....	....
A: Soil Pipe............in.	.37	.39	.39	.30	.40
Victory Pipe.........in.	.28	.30	.30	.20	.15
Weight....................lb.	1	1.8	2.8	3.7	6

Adapters
Fiber Pipe to Spigot End of Sewer Pipe

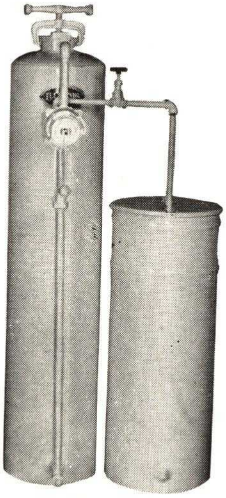

TAPER SLEEVE JOINT
P Min
Fibre Pipe
B
Clay Sewer Pipe
A = Annulus
.75"
L
O

A=Annulus (May be packed, cemented, or hot poured to make a sealed joint).

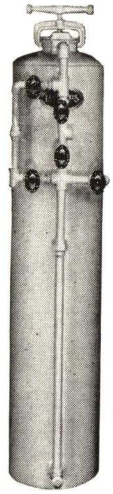
When ordering, be sure to specify size of pipe.

Pipe Size.................in.	3	4	5	6	8
Each..........................	....	...	....	....	....
P Min.....................in.	5.73	6.94	8.5	9.31	....
B.............................in.	4.9	6.1	7.4	8.4	....
L.............................in.	1.75	1.75	2.	2.25	....
O............................in.	4.25	4.50	4.75	5.	....
A.............................in.	.40	.45	.55	.50	....
Weight.....................lb.	1	1.8	2.8	3.7	6

McDonald Water Softeners



Model S
Semi-Automatic Type



Model ST
Standard Type

Available for all kinds of household and industrial applications. Produces clean, sparkling water, without the disagreeable odor or bacteria of cistern water· healthful to drink, not harmful to the skin.

Built of high-grade materials; simple, compact, efficient.

Models S and SX have semi-automatic control with multiport single control valve. Model S contains a high capacity zeolite. Model SX contains a synthetic resin of high exchange capacity. Equipped with brine tanks.

Models ST and STX are controlled with standard globe valves. Model ST contains a high capacity zeolite. Model STX contains a synthetic resin of high exchange capacity. Not equipped with brine tank or control valve.

Standard Type

With High Capacity Zeolite

No.	Grain Capacity	Mineral Content Cu. Ft.	Salt per Regeneration Pounds	Softener Tank, In. Diam.	Softener Tank, In. Height	Pipe Size In.	Space Requirement, In. Width	Space Requirement, In. Depth	Space Requirement, In. Ht.	Approx. Ship. Wt. Lb.
ST-12	12,000	1	6	10	54	¾	12	20	72	155
ST-16	16,000	1⅓	8	10	54	¾	12	20	72	170
ST-24	24,000	2	12	12	54	¾	14	22	72	245
ST-36	36,000	3	18	16	54	¾	18	26	72	325
ST-54	54,000	4½	27	18	54	¾	20	28	72	450
ST-72	72,000	6	36	20	60	1	22	30	84	770

With Synthetic Resin

No.	Grain Capacity	Mineral Content Cu. Ft.	Salt per Regeneration Pounds	Softener Tank, In. Diam.	Softener Tank, In. Height	Pipe Size In.	Space Requirement, In. Width	Space Requirement, In. Depth	Space Requirement, In. Ht.	Approx. Ship. Wt. Lb.
STX-20	20,000	1	10	10	54	¾	12	20	72	155
STX-33	33,000	1⅔	17	12	54	¾	14	22	72	245
STX-60	60,000	3	30	16	54	¾	18	26	72	325
STX-80	80,000	4	40	18	54	¾	20	28	72	450
STX-110	110,000	5½	55	20	60	1	22	30	84	770

Semi-Automatic Type

With High Capacity Zeolite

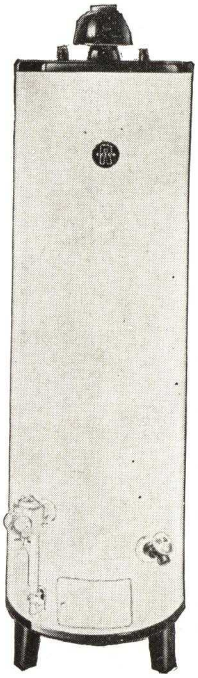
No.	Grain Capacity	Mineral Content Cu. Ft.	Salt per Regeneration Pounds	Softener Tank, In. Diam.	Softener Tank, In. Ht.	Brine Tank, In. Diam.	Brine Tank, In. Ht.	Pipe Size In.	Space Required, In. Width	Space Required, In. Depth	Space Required, In. Ht.	Approx. Ship. Wt. Lb.
S-12	12,000	1	6	10	54	12	36	¾	30	20	72	300
S-16	16,000	1⅓	8	10	54	12	36	¾	30	20	72	320
S-24	24,000	2	12	12	54	14	36	¾	32	22	72	425
S-36	36,000	3	18	16	54	18	42	¾	40	24	72	625
S-54	54,000	4½	27	18	54	18	42	¾	42	30	72	765
S-72	72,000	6	36	20	60	20	42	1	46	34	84	950

With Synthetic Resin

No.	Grain Capacity	Mineral Content Cu. Ft.	Salt per Regeneration Pounds	Softener Tank, In. Diam.	Softener Tank, In. Ht.	Brine Tank, In. Diam.	Brine Tank, In. Ht.	Pipe Size In.	Space Required, In. Width	Space Required, In. Depth	Space Required, In. Ht.	Approx. Ship. Wt. Lb.
SX-20	20,000	1	10	10	54	12	36	¾	30	20	72	300
SX-33	33,000	1⅔	17	12	54	14	36	¾	32	22	72	425
SX-60	60,000	3	30	16	54	18	42	¾	40	24	72	625
SX-80	80,000	4	40	18	54	18	42	¾	42	30	72	765
SX-110	110,000	5½	55	20	60	20	42	1	46	34	84	950

NOTE: X-models (with synthetic resin) should be used where water has a pH of less than 6 or more than 8.3; where silica is less than 12 P.P.M.; and where iron content is such that it stains fixtures.

Series 30 Mc Donald Automatic Storage Gas Water Heaters



Built to operate safely and efficiently on any domestic gas—natural, manufactured, mixed or liquefied petroleum.

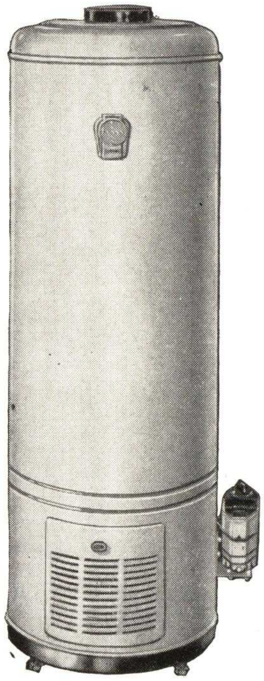
Approved by A.G.A.

A new high velocity, grid type burner thoroughly mixes primary air with gas. Precision machined, stainless steel grids insure quiet operating and rust-proofed long life. Positive port areas are thus maintained and optimum combustion efficiency assured. Condensation drip cap is cast integral with top of burner casting which evaporates moisture and prevents interference with burner ignition. Unique double-door design, easily removed by loosening two screws, permits burner removal through front access door.

100 per cent dual control utilizes the Baso thermocouple, shuts off all gas to both the main burner and the pilot whenever the pilot flame is extinguished.

Neatly styled with short legs, yet high enough for easy cleaning. Curved corners, interlocking top pan and flush door. Bell-shaped down-draft diverter tops this two toned black and white enameled model.

No.	Cap. in Gallons	Recovery in Gal. per Hr.	Input in BTU.	Ship. Wt., Lb.
30–20	20	30.8	22,000	145
30–30	30	42.0	30,000	185
30–40	40	42.0	30,000	230



McDonald DeLuxe Automatic Water Heaters

Oil Burning

A completely automatic water heater made of copper-bearing steel to prevent corrosion and rust.

The super-sensitive thermostat automatically cuts down the flow of oil when the water reaches the desired temperature, so that when there is no demand for hot water, the unit burns on a very low pilot.

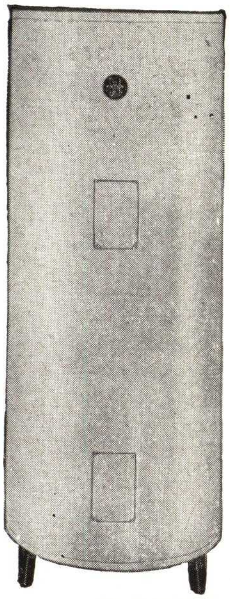
The vaporizing, removable burner assures a clean pilot light and a quiet, smokeless high fire.

Insulated with rock wool and dead air space.

Water connections, ¾ inch.

Finished in baked-on white enamel with black trim.

No.		226-S	236-S	246-S
Capacity	gallons	20	30	40
Max. Recovery Capacity	gallons	28	28	31
Casing Diameter	inches	16⅛	18⅛	18⅛
Height	inches	52	55¾	68½
Boiler Flue	inches	5	5	5
Burner Size	inches	8	8	8
Shipping Weight	pounds	200	220	240



Series 60 Mc Donald Automatic Storage Water Heaters

Provides peak water heating efficiency.

Approved by Underwriters' Laboratories, Inc., and Electrical Testing Laboratories.

Temperature control is set with a touch of the dial to give ample hot water at any time at the desired temperature. A separate thermostat for each heating element starts the current flowing as soon as water drops below the required temperature and shuts off all current as soon as the proper temperature is reached.

The heavy steel construction insures maximum durability and safety. Automatically welded and uniformly galvanized.

No.	Cap. U.S. Gal.	Standard Wattage 230 V., A.C. Single Element 1 Thermostat	Standard Wattage Dble. Element 2 Thermostats Upper	Standard Wattage Dble. Element 2 Thermostats Lower	Maximum Wattage Approved by Underwriters Single Element 1 Thermostat	Maximum Wattage Dble. Element 2 Thermostats Upper	Maximum Wattage Dble. Element 2 Thermostats Lower	Approx. Wt., Lb.
60-12S	12	1000	....	....	1750	...	....	134
60-20S	20	1250	....	....	3000	....	....	180
60-20D	20	....	1000	750	....	3000	3000	185
60-30S	30	1500	....	....	3500	....	....	210
60-30D	30	....	1500	1000	....	3500	3500	215
60-40S	40	1500	....	....	3500	....	....	260
60-40D	40	....	1500	1250	...	3500	3500	265
60-52S	52	2000	....	....	4000	....	....	285
60-52D	52	....	2000	1500	....	4000	4000	290
60-66S	66	2500	....	....	5000	....	....	325
60-66D	66	....	2500	1500	....	5000	5000	330
60-82S	82	3000	....	....	5000	....	....	370
60-82D	82	....	3000	1500	....	5000	5000	375

Whitaker Arc-Welded Galvanized Steel Range Boilers

Head and bottom of boiler have integral spuds pressed direct from the metal, eliminating the possibility of leaks caused by spuds turning or breaking out under pressure.

The body is sheared to the exact size and is formed, punched and welded. The body spuds are pressed steel, inserted in a recess or depression and welded in place to insure a leakproof opening.

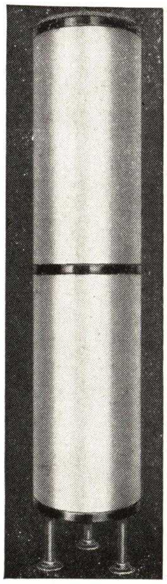
The standard boiler is guaranteed to be tight up to 85 pounds working pressure. Extra heavy boiler is guaranteed to be tight up to 150 pounds working pressure. Double extra heavy boiler is guaranteed to be tight up to 150 pounds working pressure.

Range boilers regularly furnished with six tappings; one side tapping, 6 inches from the top edge of the sheet, and one 6 inches from the bottom edge of sheet in line; two tappings in the top; one tapping in the bottom; and one tapping on the side at 180 degrees from the line of the other two side tappings—15 gallon size tanks to have such tapping 9 inches from the bottom edge of sheet, all other size tanks to have such tapping 18 inches from the bottom edge of sheet. Size of tappings: 15 through 82 gallons, 1-inch openings; 120 gallon, 1½-inch openings.

Size Inches	Std. Ex. Hvy. and Double Ex. Hvy. Each	Cap. Gal.
12x30	...	15
12x60	...	30
14x60	...	40
18x60	...	66
20x60	...	82
24x60	...	120

J-M Asbestocel Range Boiler Jackets

This jacket is highly effective in keeping hot water hot. Easily applied. Made of pre-shrunk asbestos felt, plain or corrugated.



It offers freedom from objectionable shrinkage troubles and maintains its insulating efficiency.

It is a 3-ply flexible sheet, approximately ¾ inch thick, furnished in two full-round sections, each one-half the height of the boiler. Each section is slit vertically and silicated for a distance of approximately 3 inches back from the vertical edges.

The corrugations are pressed flat for a distance of 2 inches from the top of the top section and 2 inches from the bottom of the bottom section to insure a satisfactory fit over horizontal rivets.

Has asbestos paper finish which may be painted if desired.

Standard jackets are available for boilers of 30, 40, 52, 66, 82, and 100-gallon capacity.

Rapid application is one of the outstanding features of J-M Asbestocel Jackets. The directions accompany each jacket.

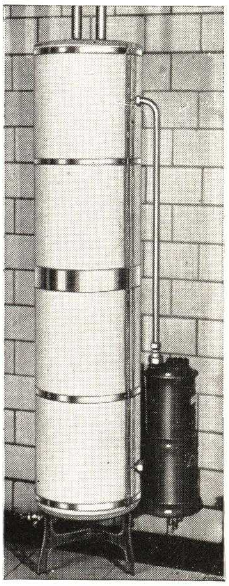
Furnished with 4 pounds of No. 352 J-M Asbestocel Cement (for covering the range boiler top), and three wide black lacquered bands.

Packed 1 jacket, with accessories, in a carton.

Prices upon application.

Fiberglas

(Range Boiler Jackets)



This jacket is furnished as a complete unit, with all materials needed to insulate a standard tank enclosed with an instruction sheet in a carton. Two blankets, each covering a vertical half of the tank, five metal bands, and a small bag of insulating cement (for rounded top of the tank) are all the parts required for complete insulating job.

No special tools are required, unless the tank is installed so tightly against other surfaces that there is not even a 1½-inch clearance between the tank and the obstruction. Ordinarily, a pair of pliers to pull up the bands (the fingers will suffice), a small trowel, spatula or a broad bladed knife for applying the cement, and a dish or pail in which to mix the cement, are all materials needed on the job.

The unique feature of this jacket is the use of high efficiency Fiberglas. This material is made of glass in fibrous form, a durable, incombustible, rot-proof material that is insect and vermin free, unharmed by extreme humidities or changing temperature conditions.

It is estimated that 85 per cent of the heat lost from the surface of a 30-gallon or 40-gallon vertical range boiler is saved by this jacket.

Jacket may be painted to harmonize with any color scheme.

*Tank Capacity.................gallons	**30**	**40**
Each..............................	**$3.98**	**4.89**
Diameter.......................inches	12	14
Shipping Weight per Carton......pounds	11¼	12¼

*Standard tanks are 60 inches long.

No. E-4676 McDonald Tripod Boiler Stands

McDONALD
DUBUQUE

Adjustable for use with either 30 or 40-gallon range boilers. Made of three identical iron castings, fastened together with three strong bolts. Height, 12½ inches.

Packed one set in a bundle. Weight, 5 pounds.

Asco Universal Boiler Stands

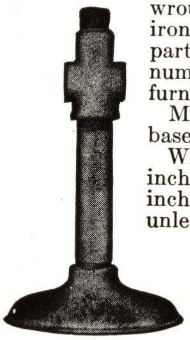
Furnished regularly with galvanized malleable tee, wrought iron nipple and cast iron base. All cast iron parts and nipple are aluminum painted. Can also be furnished all galvanized.

Made up height, 14 inches; base diameter, 8 inches.

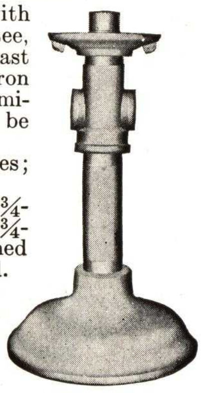
With ¾x¾, ¾x½ or 1x¾-inch galvanized tees; ¾x¾-inch tees will be furnished unless otherwise specified.

No. 103, without cast iron top plate, wt., 7 lb.

No. 104, with cast iron top plate, wt., 8 lb.



No. 103



No. 104

Hawks Universal Boiler Stands

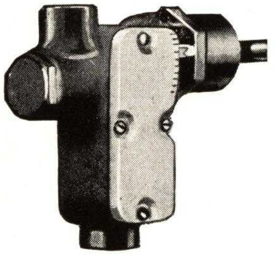
This stand will fit any size or make of boiler. It can be screwed into the bottom of the boiler and the locknut plate can be turned against the bottom of the boiler. It is neat and strong, and will support any boiler from 6 to 100 gallons capacity. The Tee is of malleable iron, hot galvanized inside and out. The stand is adjustable to any height by use of 1¼-inch pipe cut to length desired.

Tee furnished with outlets ¾x¾, ¾x½ or 1x¾ inches.

Each stand is packed complete.

With Regular Length Nipple.each **$3.00**

Snap-Action Thermostats



All-brass construction. The mechanism is simple in operation, assuring long life. Can be easily installed. Prevents flashbacks.

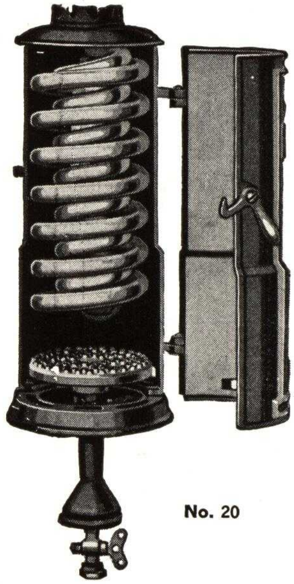
These thermostats are built with an indicator adjustment which will regulate the water temperature as desired.

Equipped with independent pilot.

A dirt trap is built inside thermostat.

No	⅜-T	½-T	¾-T	1-T
Each	**$10.53**	**11.70**	**23.40**	**28.08**
Gas Connection.............in.	⅜	½	¾	1
Approximate Capacity at ½-In. Pressure Drop..cu. ft. per hr.	70	100	200	225

Double Copper Coil Water Heaters



No. 20

This heater has cast iron jacket, Japan finish and No. 20 Stubb's gage, ¾-inch copper coils.

It has the powerful tip type burner with the bottom feed mixer.

The coils are solidly brazed and thoroughly tested.

Gas connections ½ inch; water ¾ inch; flue 3 inches.

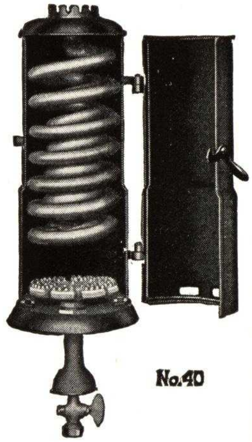
Also made with vitreous enamel finish, in either grey, green or fawn at $4.50 extra.

All heaters listed below may be furnished special with side feed gas inlet.

No.	Each	Union	Diam. In.	Height In.	Ft. Copper	Cap. Gals.	Shipping Wt., Lbs.
20	**$10.81**	None	7½	17¾	13½	30–40	30
20U	**11.71**	Galv.	7½	17¾	13½	30–40	31
20U	**12.11**	Brass	7½	17¾	13½	30–40	31
25A	**13.70**	None	8½	24	17	40	42
25U	**14.60**	Galv.	8½	24	17	40	43
25U	**15.00**	Brass	8½	24	17	40	43
30A	**14.80**	None	8½	24	20	40–52	43
30U	**15.70**	Galv.	8½	24	20	40–52	44
30U	**16.10**	Brass	8½	24	20	40–52	44
50	**16.10**	Brass	8½	24	20	40–52	45
70	**17.60**	Brass	8½	24	22	40–66	46

Sands Double Copper Coil Water Heaters

Cast Iron Jacket



No. 40

The Sands Double Coil Heater has a large cast iron jacket, black japanned. The jacket is flared, preventing heat from burning the finish.

The patented baffle plate fits between the copper coils and distributes the heat directly on the coils.

Heater is equipped with a combination drip pan and base, making a neat and attractive appearance.

Large bottom feed mixer is furnished as standard equipment but side connection L mixer can be furnished on request at no additional cost.

Heavy double copper coils with brazed fittings make up the heating unit. Every coil is dipped in a special solution which gives it a new, bright appearance. An extra heavy, air test is applied to the coil assuring against leaks or faulty copper.

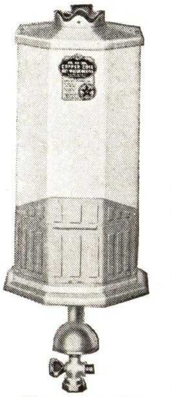
Special non-back-firing burner.

Furnished with galvanized union couplings at extra charge, have Presto unions as standard equipment.

Gas connection, ½ inch; water, ¾ inch; flue, 3 inches.

No	40	25	50	70
Each	**$18.00**	**20.00**	**22.00**	**25.00**
Capacity.............gallons	30	30	40	40
Diameter.............inches	7½	8¼	8¼	8¼
Height.............inches	18¾	21½	22¾	22¾
Shipping Weight......pounds	30	40	44	44

Sands Insulated Type Double Copper Coil Gas Water Heaters



All parts of the frame of this heater are built of formed heavy gage steel, and only the burner and mixer are made of cast iron.

Insulated with a special mica insulating material which prevents loss of efficiency through heat radiation.

Burner is raised drilled port type. Easy access to the burner through the use of a stamped sheet metal door and frame. Door snaps open and remains open until it is manually closed.

Heavy double copper coils with brazed fittings make up the heating unit. Each coil is tested under 100 pounds air pressure assuring tight joint and perfect copper tubing.

Baffle plate distributes the heat directly on the heavy double coils.

Combination removable drip pan and base. Large bottom feed mixer. Ell mixers can be supplied on request.

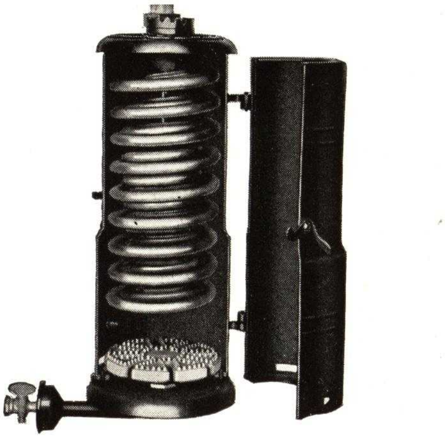
Jacket is painted both inside and outside with high heat resisting paint to eliminate rust and discoloration. The inside liner receives similar treatment.

Furnished in ivory with green top and base trim, or in two-tone gray.

No.	Each	Ht. In.	Diam. In.	BTU. Rating Natural Gas	BTU. Rating Artificial Gas	Coil Lgth. In.	Recovery Cap. Gals. per Hour Natural Gas	Recovery Cap. Gals. per Hour Artificial Gas	Ship. Wt. Lb.
*9-40-SM	$7.50	18½	8½	22000	27000	13½	30.8	37.8	21
†9-40-SMU	8.40	18½	8½	22000	27000	13½	30.8	37.8	21
*9-25-SM	9.60	21	8½	25000	25000	16	35.0	35.0	24
†9-25-SMU	10.50	21	8½	25000	25000	16	35.0	35.0	24
*9-50-SM	10.50	21	8½	25000	30000	17½	35.0	42.0	24
†9-50-SMU	11.40	21	8½	25000	30000	17½	35.0	42.0	24
*9-70-SM	11.40	24	8½	25000	30000	20½	35.0	42.0	26
†9-70-SMU	12.30	24	8½	25000	30000	20½	35.0	42.0	26

*Without union. †With union.

No. 80 Sands Triple Coil Water Heaters



This heater has triple coils of No. 20 heavy gauge copper tubing and brazed into large brass brazing couplings with large union couplings.

Used wherever a large supply of water is required. It has a powerful burner and is furnished with gas shut-off valve.

An ideal heater for making storage outfits and can be used with snap-action thermostat.

Equipped with 18 gauge coil at a slight additional cost.

Capacity, 40 to 100 gallons.

Height, 25 inches; width, 11 inches. Connections: gas, ½ inch; water, 1 inch; flue, 3 inches.

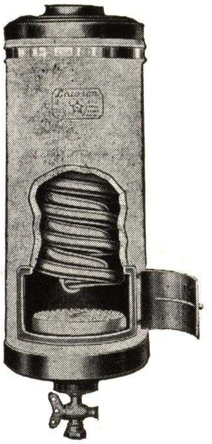
No. **80**, Shipping Weight 75 Pounds............each **$40.00**

Series 700 Lawson Insulated Copper Coil Gas Water Heaters

Heavy pressed steel top, inner and outer jacket.

Cast iron door frame and one-piece door. A highly efficient insulating material is packed between the inner and outer jackets, reducing heat loss to a minimum.

Coil readily changed by removing top of the heater which does not disturb the insulation.

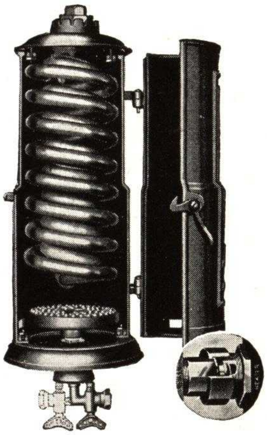


Finished in heat-resisting enamel in a pleasing color combination of dark grey top and base and silver grey jacket which will not discolor with use. Can be equipped with automatic pilot control, or for use with bottled gas at slight extra cost.

No.	Each	Unions	Type Coil	Lgth. Coil Feet	Ship. Wt. Lb.
720	....	None	Double	13½	25
721	....	Galv.	Double	13½	26
721	....	Brass	Double	13½	26
722	....	None	Double	16	27
723	....	Galv.	Double	16	28
723	....	Brass	Double	16	28
724	....	None	Double	17½	29
725	....	Galv.	Double	17½	30
725	....	Brass	Double	17½	30
726	....	None	Double	20	33
727	....	Galv.	Double	20	34
727	....	Brass	Double	20	34
730	....	*Brass	Triple	33	60

*1-inch, all other unions ¾-inch.

Lawson Double Coil Gas Water Heaters



Recommended for homes where the needed supply of hot water is considered above the average requirement.

The double coils are placed one within the other and all ends are brazed to brass couplings at both top and bottom. Coils are held securely by locknuts. Equipped with angle cock which can be placed in any desired position around base. Size boiler, 30–40 gallons.

No	Each	Ht. In.	Lgth. Coil Ft.	Lgth. Coil In.	BTU. Rating	Wt. Lb.
520	**$8.50**	19	13	6	20000	31
522	**10.50**	21¼	16	2	20000	33
524	**11.40**	22¾	17	2	20000	35
526	**12.20**	24	20	3	25000	39

With Kwik-On Couplings

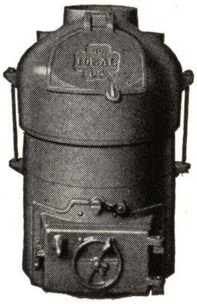
No.	With Galv. Couplings Each	With Brass Couplings Each	Ht. In.	Lgth. Coil Ft.	Lgth. Coil In.	BTU. Rating	Wt. Lb.
521	**$9.15**	**$9.40**	19	13	5	20000	32
523	**11.10**	**11.40**	21¼	16	2	20000	34
525	**12.00**	**12.30**	22¾	17	2	20000	36
527	**12.80**	**13.10**	24	20	3	25000	40

Ideal Dome Type Water Heaters

For 125 pounds working pressure. Plant tested to 315 pounds hydrostatic pressure.

Sturdily built; of cast iron. Coal burning; fuel door is at the top. No base bottom. Ashpan is not furnished.

Painted solid color.



No.	Gal.	Recovery Ratings GPH. 85° Rise	Recovery Ratings GPH. 100° Rise	Height Boiler In.	Diam. Grates In.	Tap. In.	Smoke Pipe In.	Approx. Ship. Wt. Lb.
65	65	18	15	19	10	1	5	77
80	80	26	22	22	10	1	5	95
95	95	30	25	22	10	1	5	96
125	125	35	30	25	10	1	5	110
150	150	40	34	28	10	1	5	124
210	210	50	42	25¼	12	2	5	151
250	250	54	46	24¼	12	2	5	150
300	300	81	69	27	15	2½	6	223
400	400	108	92	30½	15	2½	6	243

Ideal Scuttle-A-Day Hot Water Supply Boilers

For 125 pounds working pressure. Plant tested to 315 pounds hydrostatic pressure.

Firebrick combustion ring on all heaters. Smooth flat top and rocking grates. Draft damper can be hand-adjusted or operated from Arco automatic regulator, available at extra cost.

Ashpan furnished extra.

Base plate furnished at extra cost.

No.	75F	110F	175F
Heating Capacity ... gallons	75	110	175
Recovery Ratings: 85° Rise ... gph.	22	33	52
100° Rise ... gph.	19	28	44
Diameter of Grate ... inches	10	10	12
Height of Boiler ... inches	18½	21½	25¾
Height to Center of Supply ... inches	17½	20½	....
Height to Center of Return ... inches	14¼	14¼	14
Outlets and Inlets ... no. of each	1	1	2
Size ... inches	1	1	1¼
Size Smokepipe ... inches	6	6	6
Approx. Shipping Weight ... pounds	108	123	195

Arcola Water Heaters

Coal Burning

Designed to provide a constant supply of stored hot water, up to its full rated capacity. Tested at factory with hydrostatic pressure of 250 pounds per square inch.

Has one 2½-inch inlet and two 2-inch outlet tappings. Smokepipe size, 6 inches.

No. 801 damper regulator, which automatically controls the dampers according to required temperature of water, can be supplied when specified; shaker lever and cleaning appliance furnished with each heater.

No.	No. of Sections	*25° Rise GPH.	*85° Rise GPH.	*100° Rise GPH.	Ht. In.	Width In.	Lgth. In.
1004-A	4	272	80	68	44⅛	17	12
1005-A	5	355	105	89	44⅛	17	15
1006-A	6	440	130	110	44⅛	17	18
1007-A	7	525	155	132	44⅛	17	21
1008-A	8	595	175	149	44⅛	17	24
1009-A	9	645	190	161	44⅛	17	27
1010-A	10	700	205	175	44⅛	17	30

*Based on 6-hour firing period.

Walworth Special Long Turn Boiler Elbows

Galvanized Malleable Iron

Furnished with ¾-inch female outlet and 1-inch male outlet.

Size ... inches	¾x1
Each ...	**$.58**
Center to End ... inches	3

Kewanee Tabasco Steel Welded Hot Water Heaters

100 Pounds Working Pressure
150 Pounds Hydrostatic Test

Rated to heat 165 to 700 gallons of water raising temperature 50° in one hour. Conforms to A.S.M.E. code.

Can be directly connected to water main.

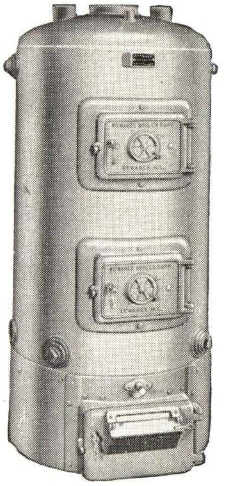
The shell is formed from full-gage steel plate above minimum thickness actually required.

The heads fitted and located accurately by mechanically operated jigs are form flanged to mathematically figured curve. As much primary heating surface as possible is presented directly over the fire increasing the absorption of radiant heat.

Mud ring is steel, welded each edge all around. Shell openings are framed with steel welded tight. Door and frame castings are extra substantial with neat and serviceable appearance. Firedoor opens wide enough for man-size scoop shovel.

No.	Heating Capacity GPH 50° Rise	Shell Diam. In.	Shell Height In.	Total Height Inches	Flow and Return Inches	Smoke Outlet Diam. Inches	Grate Area Sq. Ft.	Outside Surface to Cover Sq. Ft.	Approx. Ship. Weight Pounds
018	165	18	36	50	2–1½	6	0.96	14	460
022	250	21	36	50	2–1½	6	1.25	17	550
027	400	25	48	62	2–2	8	2.1	27	870
030	550	31	46	60	2–2½	8	3.2	32	1170
032	700	31	54	68	2–2½	8	3.2	38	1290

Kewanee Welded Steel Water Heating Garbage Burners



100 Pounds Working Pressure

150 Pounds Hydrostatic Test

Rated to heat 165 to 700 gallons 50° per hour. Conforms to A.S.M.E. code.

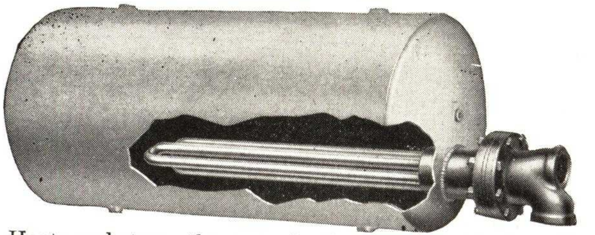
One ton of garbage, when dry, contains the equivalent of 200 pounds of good coal. By converting this waste into fuel a saving from 30 to 50 per cent may be effected in the cost of heating water.

Both fire doors are full size so the same boiler scoop shovel can be used for either. Upper grate is a deep grid with ample air spacing.

Capacity ratings given below are based on raising temperature of water 50° in one hour.

No.	G**018**	G**022**	G**027**	G**032**
Cap. Hot Water, 50° Rise ... gph.	165	250	400	700
Cap. Refuse Chamber ... bushels	1	1½	2½	3½
Base Diameter ... in.	19	22	26	32
Ht. to Bottom of Refuse Door .. in.	39½	39½	43½	43½
Height Shell and Base .. in.	56	56	62	68
Smoke Outlet Diameter. in.	6	6	8	8
Firepot Diameter ... in.	13¼	16	20	24¼
Refuse and Fire Door Openings, Ht. x Width, in Shell ... in.	8x7½	8x7¾	9¼x10¼	9¼x10½
Size Flow and Return ... in.	2–1½	2–1½	2–2	2–2½
Out. Surface to Cover ... sq. ft.	15	18	25	35
Approx. Ship. Wt. Complete ... lb.	575	675	925	1390

B&G Water Tanks and Heaters
Bolted Type Head

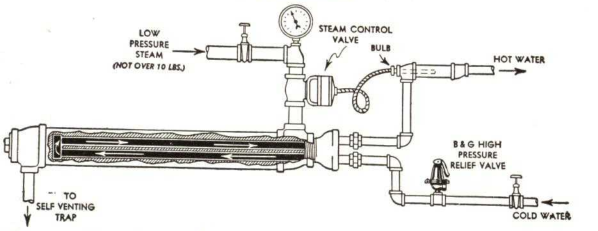


Heats and stores the water in the same unit. Can be operated by passing either steam or hot water through the coil. Particularly suitable for boiler rooms with low head room.

Tanks are of galvanized welded steel (127 pounds working pressure, 300 pound test) with the collar of the heating unit welded into the head of the tank. Heating coils are of 1-inch o.d. copper tubing. Two outlets at top and bottom of tank provide for hot and cold water lines. Four tank openings.

		Tank				Heater		
No.	Each	Tank Cap. Gal.	Width In.	Lgth. In.	Tank Openings In.	Heating Surface Sq. Ft.	Inlet and Outlet Conn. In.	Wt. Lb.
40	$96.00	40	16	48	1	6	2	158
52	112.00	52	16	60	1	6	2	165
66	124.00	66	18	60	1	6	2	226
82	150.00	82	20	60	1½	7½	2	249
100	166.00	100	22	60	1½	7½	2	285
120	186.00	120	24	60	1½	7½	2	307
144	234.00	144	24	72	1½	9	2	335
180	302.00	180	30	60	1½	14	3	610

B&G Unitem Heaters
For Steam


LOW PRESSURE STEAM (NOT OVER 10 LBS.)
STEAM CONTROL VALVE
BULB
HOT WATER
B & G HIGH PRESSURE RELIEF VALVE
TO SELF VENTING TRAP
COLD WATER

Screwed head tankless type can be built up into a heater for use with low or high pressure steam. Screwed into a casing made up of regular pipe and fittings. Only two tees, a plug and a piece of pipe, are required. Assembly of the unit can be made on the job and a most economical heater obtained for this kind of service.

Four 1¼-Inch Tubes

No.	Each	Heating Surface Sq. Ft.	Lgth. Feet	Thread On Screwed Head Inches	Service Water Inlet and Outlet Conn. Inches	Weight Pounds
48	$68.40	10.4	8	3½	1½	29
49	73.40	11.7	9	3½	1½	32
410	78.00	13.0	10	3½	1½	35
411	80.00	14.3	11	3½	1½	38
Four 1½-Inch Tubes						
210	$113.80	15.7	10	4	2	57
211	119.60	17.2	11	4	2	62
212	126.30	18.8	12	4	2	66

Chart on water heating capacity per square foot of heating surface, will be sent on request.

B&G Tank Heater Units
With or Without Collar

Heating unit for Unitem Tank and Heater may be purchased separately, for inserting in tanks already installed.

Copper tubes, 1-inch outside diameter.

No.	Without Collar Each	With Collar Each	Collar Flange To End of Tube In.	Collar Flange to Front of Heater In.	Lgth. Collar In.	Diam. Collar Flge. In.	Collar O.D. In.	Collar I.D. In.	Head Conn. I.P.S. In.	Heating Surface Sq. Ft.	Wt. Lb. without Collar
448	$45.32	$56.32	48	6 11/16	5¼	7	4½	4	2	6	68
460	58.08	69.08	60	6 11/16	5¼	7	4½	4	2	7½	78
472	66.44	77.44	72	6 11/16	5¼	7	4½	4	2	9	89
484	80.96	91.96	84	6 11/16	5¼	7	4½	4	2	11	100
736	91.52	113.52	36	7 13/16	5¼	11	7¾	7	3	14	137
748	116.60	138.60	48	7 13/16	5¼	11	7¾	7	3	19	160
760	129.80	151.80	60	7 13/16	5¼	11	7¾	7	3	23½	181
772	145.20	167.20	72	7 13/16	5¼	11	7¾	7	3	28	202
784	158.40	180.40	84	7 13/16	5¼	11	7¾	7	3	33	225
1036	187.00	233.20	36	9⅛	5¼	15	10¾	10	4	28	226
1048	209.00	255.20	48	9⅛	5¼	15	10¾	10	4	37½	260
1060	231.00	277.20	60	9⅛	5¼	15	10¾	10	4	47	294
1072	264.00	310.20	72	9⅛	5¼	15	10¾	10	4	56	327
1084	286.00	332.20	84	9⅛	5¼	15	10¾	10	4	65	360
1096	308.00	354.20	96	9⅛	5¼	15	10¾	10	4	75	395
1436	396.00	470.80	36	12 11/16	7	19½	14¾	14	6	60	396
1448	429.00	503.80	48	12 11/16	7	19½	14¾	14	6	80	458
1460	495.00	569.80	60	12 11/16	7	19½	14¾	14	6	100	521
1472	572.00	646.80	72	12 11/16	7	19½	14¾	14	6	120	581
1484	627.00	701.80	84	12 11/16	7	19½	14¾	14	6	140	642
1496	671.00	745.80	96	12 11/16	7	19½	14¾	14	6	160	720
14108	743.60	818.40	108	12 11/16	7	19½	14¾	14	6	180	765

	Capacities Gallons in 1 Hour					
	Heated 50° to 150° F. Below Boiler Water Line			Heated 50° to 180° F. with Steam in Tubes		
No.	Boiler Water 212°	Boiler Water 200°	Boiler Water 180°	1 Lb. Pressure	2 Lb. Pressure	5 Lb. Pressure
40– 52– 66–448	80	70	50	130	160	190
82–100–120–460	100	88	62	160	200	235
144–472	120	105	76	197	250	290
484	140	123	87	230	288	340
180–736	180	164	110	290	365	435
748	240	212	152	400	500	590
760	300	260	185	495	620	730
772	360	314	227	590	740	870
784	420	370	262	690	870	990
1036	360	314	227	590	740	870
1048	480	420	300	790	975	1160
1060	600	525	375	990	1220	1460
1072	715	630	445	1175	1460	1740
1084	830	730	515	1360	1680	2020
1096	970	840	595	1570	1950	2320
1436	765	670	475	1260	1560	1860
1448	1020	895	635	1680	2180	2480
1460	1275	1120	795	2100	2600	3100
1472	1530	1340	955	2520	3120	3620
1484	1790	1570	1100	2940	3640	4340
1496	2040	1790	1270	3360	4160	4960
14108	2340	2180	1440	3900	4680	5580

Capacities with 1¼-inch o.d. copper tubes on request.

B&G Junior Unitem Heaters

Made of copper and bronze.

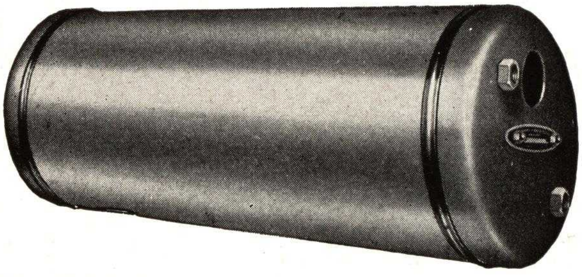
Furnished with screwed head only. Can be screwed into a coupling welded into a storage tank.

If used as an outside type heater, it can be screwed into a casing made of pipe and fittings.

			Capacities in Gal. in 1 Hr. With Domestic Water in Coil						
			Heated 50° to 150°F. Below Boiler Water Line		Heated from 50° to 180°F. Submerged in Steam of 2 Lb. Pressure				
No.	Each	Heating Surface in Sq. Ft.	Boiler Water at 212°F.	Boiler Water at 180°F.		Size Pipe Thread on Head In.	Lgth. Overall Coils In.	Inlet and Outlet Conn. I.P.S. In.	Wt. Lbs.
6312	$18.00	1.15	15	9	30	2½	12	1½	7
6324	24.00	2.3	29	18	60	2½	24	1½	10
6336	27.00	3.5	45	28	90	2½	36	1½	13
6348	30.00	4.75	60	38	125	2½	48	1½	15
8324	30.50	3.14	40	24	80	3	24	2	12
8336	34.70	4.72	60	37	120	3	36	2	15
8348	38.90	6.3	80	50	165	3	48	2	19
8360	43.10	7.85	100	60	200	3	60	2	22

B & G Tankless Water Heaters

Horizontal—Without Jacket



Installed in basements lacking space for storage tanks. Non-corrosive and rustproof. Copper and bronze are used on all parts in contact with service water. Ample space around each tube permits free and rapid circulation of boiler water and effects a high rate of heat transmission.

Where water pressures exceed 40 pounds it is advisable to install a pressure reducing valve in cold water supply to the heater.

A temperature regulating valve is recommended.

A water softener installation will help prevent liming of coils in hard water territories.

Coil opening, ¾ inch.

No.	Each	Lgth. In.	Capacity, Gallons Heated from 40°F to 140°F. Boiler Water At 180°F. Per Hr.	Boiler Water At 180°F. Per Min.	Boiler Water At 200°F. Per Hr.	Boiler Water At 200°F. Per Min.	Heating Surface In. Sq. Ft.	Shell Openings In.	Approx. Ship. Weight Pounds
T12	**$56.68**	27 3/16	210	3½	315	5	12	2	92
T14	**64.00**	31 3/16	240	4	365	6	14	2½	100
T16	**74.00**	35 3/16	300	5	450	7½	16	2½	108
T20	**106.00**	31 1/16	360	6	540	9	20	2½	114
T30	**140.00**	41 15/16	480	8	750	12½	30	3	154

B&G Super Tankless Water Heaters

For use in buildings requiring a large volume of hot water. Can be installed below the water line and circulated with a pump, or installed to circulate by gravity.

Removable front plates are provided on the head of each copper coil element. Unit can be installed at any convenient height below water line. The booster pump makes it possible to locate the heater on the floor and in a corner of the boiler room without affecting the output of the heater.

All connections from the boiler must have proper pitch to prevent air pockets. Rustproof, only copper and bronze are used in all parts in contact with service water.

No.	Each	Heating Surface in Sq.Ft.	Capacities, GPH. 40° to 140°F. Boiler Water at 212°	Boiler Water at 180°	*Pump Size In.	Lgth. In.	Width In.	*Shell Opening In.	Service Water Opening Inches	Wt. Lb.
7–1237	**$204.70**	16.45	329	164	1½	94	8¾	4	1½	241
7–1238	**207.00**	18.80	376	188	1½	106	8¾	4	1½	270
7–1239	**211.60**	20.95	419	210	1½	118	8¾	4	1½	300
7–12310	**218.50**	23.50	470	235	2	130	8¾	4	1½	332
7–12311	**225.40**	25.85	517	259	2	142	8¾	4	1½	367
7–12312	**230.00**	28.20	565	282	2	154	8¾	4	1½	398
10–1638	**236.90**	25.04	500	251	2	105	11¾	5	1½	400
10–1639	**243.80**	28.18	565	282	2	117	11¾	5	1½	433
10–16310	**253.00**	31.30	625	313	2½	129	11¾	5	1½	475
10–16311	**266.80**	34.43	690	344	2½	141	11¾	5	1½	512
10–16312	**280.60**	37.82	755	378	2½	153	11¾	5	1½	549
10–2438	**299.00**	37.60	750	376	2½	105	11¾	5	2	423
10–2439	**315.10**	42.30	845	423	2½	117	11¾	5	2	469
10–24310	**333.50**	47.00	940	470	2½	129	11¾	5	2	514
10–24311	**345.00**	51.70	1040	517	3	141	11¾	5	2	559
10–24312	**356.50**	56.40	1130	564	3	153	11¾	5	2	606
17–2438	**724.50**	75.20	1500	752	3	105	19⅝	6	2	644
17–2439	**770.50**	84.60	1690	846	3	117	19⅝	6	2	710
17–24310	**816.50**	94.00	1880	940	3	129	19⅝	6	2	772

*When heater location is below water line of boiler, pump must be used to circulate water between heater and boiler. Installation of pump permits smaller pipe and fittings than when heater is located above water line and circulated by gravity. Shell openings shown in table are for gravity circulation when heater is located above water line.

B&G Unitem Submerged Water Heaters

For Tank or Tankless Installation

For use in either steam or hot water steel boilers. In steam boilers they are placed below the water line.

Consists of an assembly of copper tubes joined to a bronze partitioned head which is either bolted or screwed into the heating boiler.

When a B&G Booster is used to circulate water between tank and heater, select the heater on tankless ratings.

**Tankless Operation—Multiple-Pass

Twelve ¾-Inch Tubes

No.	Each	Heating Surface in Sq. Ft.	Capacity, GPH. 50° to 150° Temp. Rise Boiler Water 210°	Boiler Water 200°	Boiler Water 180°	Installed Lgth. Feet	Size of Opening Which Must Be Cut in Boiler, In. Width	Ht.	Service Water Opening In.	Wt. Lb.
T1235	**$102.00**	11.75	350	212	140	5	4	3⅛	1	43
T1236	**106.00**	14.10	423	254	169	6	4	3⅛	1	49
T1237	**112.00**	16.45	493	296	197	7	3⅝	2⅞	1	53
T1238	**117.80**	18.80	564	338	226	8	3⅝	2⅞	1½	58
T1239	**126.60**	20.95	628	362	251	9	3⅝	2⅞	1½	66
T12310	**132.00**	23.50	705	422	282	10	3⅝	2⅞	1½	74
T12311	**139.00**	25.85	775	465	310	11	3⅝	2⅞	1½	78
T12312	**147.80**	28.20	846	508	338	12	3⅝	2⅞	1½	92
Sixteen ¾-Inch Tubes										
T1635	**$126.60**	15.65	469	282	188	5	7¼	2	1½	67
T1636	**132.00**	18.78	563	338	225	6	7¼	2	1½	82
T1637	**140.00**	21.91	657	394	263	7	7¼	2	1½	93
T1638	**147.80**	25.04	751	450	300	8	7¼	2	1½	112
T1639	**158.00**	28.17	845	506	338	9	7¼	2	1½	115
T16310	**164.00**	31.30	939	564	376	10	7¼	2	1½	126
T16311	**176.00**	34.43	1032	610	413	11	7¼	2	1½	132
T16312	**183.00**	37.82	1135	680	454	12	7¼	2	1½	138
Twenty-Four ¾-Inch Tubes										
T2436	**$177.40**	28.2	846	508	338	6	7¼	2⅞	2	107
T2437	**187.00**	32.9	987	592	395	7	7¼	2⅞	2	120
T2438	**196.00**	37.6	1128	676	451	8	7¼	2⅞	2	135
T2439	**204.00**	42.3	1269	760	508	9	7¼	2⅞	2	151
T24310	**214.00**	47.0	1410	845	564	10	7¼	2⅞	2	165
T24311	**224.00**	51.7	1551	930	620	11	7¼	2⅞	2	179
T24312	**232.00**	56.4	1692	1015	677	12	7¼	2⅞	2	195

*Operation With Storage Tank—2-Pass

Twelve ¾-Inch Tubes

S1235	**$102.00**	11.75	224	188	140	5	4	3⅛	1	43
S1236	**106.00**	14.10	268	226	169	6	4	3⅛	1	49
S1237	**112.00**	16.45	312	263	197	7	3⅝	2⅞	1	53
S1238	**117.80**	18.80	358	300	226	8	3⅝	2⅞	1½	58
S1239	**126.60**	20.95	398	335	251	9	3⅝	2⅞	1½	66
S12310	**132.00**	23.50	447	376	282	10	3⅝	2⅞	1½	74
S12311	**139.00**	25.85	492	414	310	11	3⅝	2⅞	1½	78
S12312	**147.80**	28.20	536	452	338	12	3⅝	2⅞	1½	92
Sixteen ¾-Inch Tubes										
S1635	**$126.60**	15.65	298	250	188	5	7¼	2	1½	67
S1636	**132.00**	18.78	357	300	225	6	7¼	2	1½	82
S1637	**140.00**	21.91	417	350	263	7	7¼	2	1½	93
S1638	**147.80**	25.04	476	400	300	8	7¼	2	1½	112
S1639	**158.00**	28.17	535	450	338	9	7¼	2	1½	115
S16310	**164.00**	31.30	595	500	376	10	7¼	2	1½	126
S16311	**176.00**	34.43	655	550	413	11	7¼	2	1½	132
S16312	**183.00**	37.82	720	605	454	12	7¼	2	1½	138
Twenty-Four ¾-Inch Tubes										
S2436	**$177.40**	28.2	535	450	338	6	7¼	2⅞	2	107
S2437	**187.00**	32.9	625	525	395	7	7¼	2⅞	2	120
S2438	**196.00**	37.6	715	600	451	8	7¼	2⅞	2	135
S2439	**204.00**	42.3	805	675	508	9	7¼	2⅞	2	151
S24310	**214.00**	47.0	890	750	564	10	7¼	2⅞	2	165
S24311	**224.00**	51.7	985	830	620	11	7¼	2⅞	2	179
S24312	**232.00**	56.4	1070	905	677	12	7¼	2⅞	2	195

*When bottom of tank is level with or above the heater.

**Tankless heater systems rated on service pressure up to 40 pounds. Where higher pressure, use 20% larger heater for each 10 pounds pressure increase. Specify city water pressure when ordering. Double above capacities for heaters submerged in steam at 5 pounds pressure.

B&G Indirect Water Heaters

For any steam, vapor, or hot water heating boiler. Adapted to installations on cast iron sectional boilers, where it is not possible to install an internal submerged heater. With proper electrical controls, heater will furnish an ample supply of hot water in summer and winter. Tubes, heads and all parts in contact with domestic water are of rustproof bronze or copper. Coils are easily removed.

*For marine use—same as standard but with brass instead of cast iron shell, tested to 125 pounds working pressure; each, $37.30.

Single Coil Heaters

No.	Each	Cap. Gallons in 3 Hrs. Boiler Water at 212°	Boiler Water at 200°	Boiler Water at 180°	Max. Lgth. In.	Max. Width In.	Boiler Conn. In.	Service Water Conn. In.	Approx. Ship. Wt. Lb.
30	$7.56	30	25	18	11 7/8	5 1/8	1	3/4	12
*40	11.74	40	33	24	12 7/8	5 1/8	1	3/4	13
52	14.28	52	42	31	14 7/8	5 1/8	1	3/4	15
70	17.36	70	57	43	16 1/2	5 3/16	1 1/4	3/4	17
90	20.70	90	74	55	19	6 5/8	1 1/2	1	39
100	23.70	100	82	61	20 3/8	6 5/8	1 1/2	1	43
120	28.00	120	98	73	23	6 5/8	1 1/2	1	47
150	32.00	150	123	92	25 1/4	6 5/8	1 1/2	1	52

Double Coil Heaters

No.	Each	Boiler Water at 212°	Boiler Water at 200°	Boiler Water at 180°	Max. Lgth. In.	Max. Width In.	Boiler Conn. In.	Service Water Conn. In.	Approx. Ship. Wt. Lb.
160	$38.50	160	131	98	12 3/4	10 1/2	2	1 1/2	61
200	44.80	200	164	122	15 3/8	10 1/2	2	1 1/2	72
300	58.80	300	246	183	20	10 1/2	2	1 1/2	94
400	72.60	400	328	244	24	10 1/2	2	1 1/2	101
500	89.60	500	410	305	27 1/4	10 1/2	2	1 1/2	122

Horizontal Tube Heaters

No.	Each	Boiler Water at 212°	Boiler Water at 200°	Boiler Water at 180°	Max. Lgth. In.	Max. Width In.	Boiler Conn. In.	Service Water Conn. In.	Approx. Ship. Wt. Lb.
600	$98.00	600	492	366	26	13 3/4	3	2 1/2	98
800	117.60	800	656	488	29 1/4	13 3/4	3	2 1/2	100
1000	151.20	1000	820	610	32 3/4	13 3/4	3	2 1/2	102
1200	228.00	1200	984	732	47 3/4	18	4	3	217
1600	243.60	1600	1312	976	54 3/4	18	4	3	238
2000	280.00	2000	1640	1220	62 7/8	18 5/16	6	3	260
2500	328.00	2500	2050	1525	71	18 5/16	6	3	290
3000	576.00	3000	2460	1830	81 1/8	18 5/16	6	3	320

Excelso Fin-Pin Water Heaters

An efficient hot water supply heater for down in the fire pot of warm air furnaces and hot water heating boilers.

The fins allow air passage around heater, thus avoiding deadened fire.

Well designed for quick circulation. Easy to install.

The heater has 4 tappings to meet all requirements.

Made in cast iron or brass.

No.	Iron Each	Brass Each	Capacity Gallons	Tappings Inches
30	.....	.....	30	1
40	.....	.....	40	1

Tankless Taco Heaters

TANKLESS
TACO

Cast-iron shell with copper coils permanently expanded into bronze terminals. Provision is made for easily draining or taking apart for cleaning.

Test pressure: coil 300 pounds, shell 60 pounds per square inch.

No.	Each	Cap., Gal. Heated From 40°F. to 140°F. Boiler Water at 180° F. Per Min.	Per Hr.	Boiler Water at 212°F. Boiler Steaming Per Min.	Boiler Conn. In.	Domestic Water Conn. In.	Ht. In.	Lgth. In.	Ship. Wt. Lb.
12	$56.50	3 1/2	210	5	2	1/2	9 1/2	16	70
14	64.00	4	240	6	2	1/2	14	17 9/16	105
15	78.00	5	300	7 1/2	2	1/2	14 1/2	20	130
18	110.00	6	360	9	2 1/2	3/4	17	22	185

Excelso Indirect Water Heaters

Consists of cast iron shell with heavy copper coil within. Nos. 10, 011, 012 and 012A have cover opening on one side. Nos. 13 to 48 inclusive have cover opening at top and replaceable coils. Nos. 10 to 16 inclusive have union at both coil openings. All other openings have connections. Other sizes of Excelso Indirect Heaters have female connections at coil and shell openings. When used with a steam or vapor boiler, both shell openings are connected below the water line. This allows the boiling water (not steam) from the boiler to flow through the shell, heating the domestic water circulating in the copper coil. Can be connected to any steam or vapor heating boiler. May also be used with live steam.

Single Coil

Single Coil

No.	Each	Lgth. In.	Wdth. In.	Diam. In.	Shell Openings In.	Coil Openings In.	C. to C. Coil Openings In.	Ship. Wt. Lb.
10	......	8 7/8	..	5 3/4	1	3/4	5 1/2	10
011	......	11 1/2	..	5 3/4	1	3/4	6 5/16	12
012	......	13 1/2	..	5 3/4	1	3/4	8 5/16	14
012A	......	14 3/4	..	5 3/4	1	3/4	11 3/16	17
13	......	14 1/4	..	6 1/2	1 1/2	1	7 5/8	31
14	......	18	..	6 1/2	1 1/2	1	11 3/8	37
14A	......	20 5/8	..	6 1/2	1 1/2	1	14	42
15	......	21 7/8	..	6 1/2	1 1/2	1	15 1/4	44
16	......	26	..	6 1/2	1 1/2	1	19 1/4	56

Double Coil

No.	Each	Lgth. In.	Wdth. In.	Diam. In.	Shell Openings In.	Coil Openings In.	C. to C. Coil Openings In.	Ship. Wt. Lb.
25	......	12 1/2	..	9	2	1 1/2	6 3/8	65
26	......	15	..	9	2	1 1/2	8 7/8	70
27	......	19	..	9	2	1 1/2	13 5/8	90
28	......	23 1/4	..	9	2	1 1/2	17 3/4	100

Triple Coil

No.	Each	Lgth. In.	Wdth. In.	Diam. In.	Shell Openings In.	Coil Openings In.	C. to C. Coil Openings In.	Ship. Wt. Lb.
34	......	18 3/4	..	13 3/4	3	2 1/2	11 1/2	210
35	......	21	..	13 3/4	3	2 1/2	13 5/8	230
36	......	25	..	13 3/4	3	2 1/2	17 3/4	255
37	......	29	..	13 3/4	3	2 1/2	21 1/2	280

Dual Coil

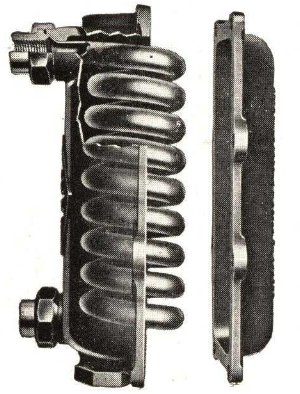
No.	Each	Lgth. In.	Wdth. In.	Diam. In.	Shell Openings In.	Coil Openings In.	C. to C. Coil Openings In.	Ship. Wt. Lb.
42	......	21 1/2	26	13 3/4	4	3	13 5/8	425
44	......	25 1/4	26	13 3/4	4	3	17 3/4	490
46	......	29 1/4	26	13 3/4	4	3	21 1/2	500
48	......	35 1/4	26	13 3/4	4	3	27 1/2	620

Capacities, Gallons per Hour

No.	85° Rise Heated from 40°F. to 125°F. Heater Below Water Line Boiler Water at 212°F.	Heater with Boiler Water at 180°F.	Heater in Live Steam 0 Lb. Press.	100° Rise Heated from 40°F. to 140°F. Heater Below Water Line Boiler Water at 212°F.	Heater with Boiler Water at 180°F.	Heater in Live Steam 0 Lb. Press.
10	11.7	....	15.6	10.	....	13.3
011	11.7	....	19.5	10.	....	16.6
012	15.6	....	29.4	13.3	....	25.
012A	20.3	11.7	39.	17.3	10.	33.3
13	25.8	15.6	48.9	22.	13.3	41.6
14	32.	20.3	62.7	27.3	17.3	53.3
14A	39.	25.8	78.3	33.3	22.	66.6
15	47.	32.	88.	40.	27.3	75.
16	56.4	39.	98.	48.	33.3	83.3
25	62.7	47.	117.6	53.3	40.	100.
26	75.	56.4	156.8	64.	48.	133.3
27	117.6	62.7	235.	100.	53.3	200.
28	156.8	75.	294.	133.3	64.	250.
34	196.	117.6	352.9	166.6	100.	300.
35	235.	156.8	470.5	200.	133.3	400.
36	313.6	196.	588.	266.6	166.6	500.
37	392.	235.	686.	333.3	200.	583.3
42	470.5	392.	784.	400.	333.3	666.6
44	627.4	470.5	980.	533.3	400.	833.3
46	784.	627.4	1176.4	666.6	533.3	1000.
48	980.	784.	1568.	833.3	666.6	1333.3

Domestic Taco Water Heaters

With Brass Unions



This heater is connected below the water line of steam or vapor boilers. The water in the heating boiler circulates through the shell of the Taco Heater, transferring its heat to the domestic water which flows through the coil to the tank.

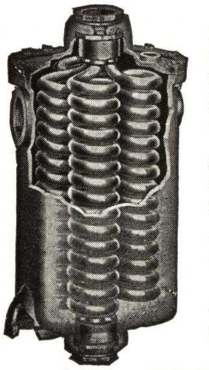
Consists of a single copper coil, tested to 1200 pounds, permanently expanded into cast iron shell, tested to 60 pounds.

Unions are provided for quick installation.

Water comes into contact with copper and brass, not iron, thus avoiding any possible discoloration. The removable cover permits easy cleaning without disconnecting any piping.

No.	Each	Cap., Gals. In 3 Hrs. Heated From 40° to 140° F. At 212° F.	At 160° to 190° F.	Steam 0 Lb. Gauge Pressure	Cap., Sq. Ft. Hot Water Radiation At 212° F.	Steam 0 Lb. Gauge Pressure	Boiler Conn. In.	Tank Conn. In.	Ht. In.	Diam. In.	Ship. Wt. Lb.
0	**$7.20**	30	....	40	15	20	1	¾	8¾	5½	10
30	**8.80**	30	....	50	20	30	1	¾	10	5½	12
1	**11.20**	40	....	75	30	50	1	¾	12	5½	14
1A	**13.60**	52	30	100	40	65	1	¾	15	5½	18
1B	**16.84**	66	30–40	125	50	85	1¼	1	14	7½	22
2	**19.74**	82	40–52	150	60	100	1¼	1	16½	7½	27
2A	**22.60**	100	52–66	175	75	125	1¼	1	18¾	7½	31
2B	**26.66**	120	66–82	225	90	150	1¼	1	21¼	7½	34
2C	**30.60**	144	82–100	275	105	175	1½	1	19½	9	50
3	**36.70**	160	100–120	300	120	200	2	1¼	21¾	9	65
3A	**42.66**	200	120–144	375	150	250	2	1¼	26	9	80

Multi-Coil Taco Heaters



Consists of cast iron housing with removable cover and removable heating surface made of four coils. Maximum amount of heating surface is placed in minimum vertical space, so that entire heater is close to water line in boiler.

To clean heater simply remove bolts and cover, disconnect domestic supply and return lines, and entire heating surface lifts out in one unit.

Tank connections face up and down; boiler supply connections sideways; boiler return connection down.

Tapping is provided for immersion type aquastat for use with Taco-Abbott System.

Test pressure: Coil, 300 pounds per square inch; shell, 100 pounds per square inch.

Size No.	Each	Cap., Gals. in 3 Hrs. Heated From 40° to 140°F. Below Water Line Boiler Water at 212°F.	¶Boiler Water at 180°F.	Steam 0 Lb. Ga. Press.	Cap., Sq. Ft. Hot Water Rad. 175° Water §Below Water Line at 212°F.	‖Steam 0 Lb. Ga. Press.	Ht. In.	Diam. In.	Ship. Wt. Lb.
*MC**150**	**$60.00**	250	150	475	210	310	20	8¾	65
*MC**180**	**69.00**	300	180	560	250	375	20¼	9⅞	75
*MC**240**	**84.00**	400	240	750	330	500	22⅜	9⅞	84
†MC**300**	**93.00**	500	300	940	420	625	23	12	129
†MC**360**	**102.00**	600	360	1150	500	750	25½	12	140
‡MC**450**	**115.00**	750	450	1410	630	940	26⅝	14⅞	209
‡MC**600**	**170.00**	1000	600	1620	710	1130	30¾	14⅞	251

Pipe connections: *Boiler, 2 inches; tank, No. MC150, 1¼ inches—Nos. MC180 and MC240, 1½ inches; †boiler, 2½ inches; tank, 2 inches; ‡boiler, 3 inches; tank, 2½ inches.

§Based on 120°F. inlet temperature to heater and 160°F. outlet temperature.

‖Based on 140°F. inlet temperature to heater and 180°F. outlet temperature.

¶Automatically fired installation for year around operation with Taco-Abbott System.

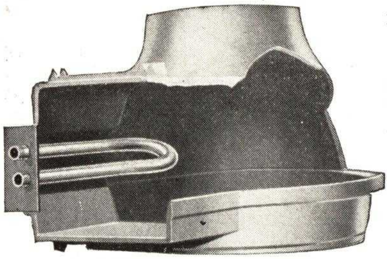
Globe No Pocket 1-Piece Furnace Coils

U.S. Pat. No. 1649660 Canadian Pat. No. 284979

GLOBE
SIZZLER
HEATS WATER HOT
ONE PIECE · NO POCKETS ·
GLOBE
SIZZLER
HEATS WATER HOT

Made of specially treated steel and brass pipe to fit all makes of furnaces. Circulation is always in a horizontal or an upward direction. The offset loop over the fire gives increased benefit of heat. The coil is self-draining.

There are no fittings, no lime pockets, and no sharp bends.



Installed in Furnace Bowl

Can be installed right or left.

Standard spread of coil is 2½ inches, center to center, but can be spread to 3 or 3½ inches. Special sizes or coils of any center made to order. Standard construction coil, one end ½ inch longer than the other end.

Packed in individual cartons.

Average Weight with Cartons and Packages

Steel or Brass

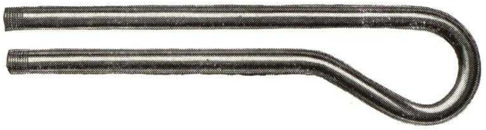
Lgth. In.	Wt., Lbs. ¾-In.	1-In.	Lgth. In.	Wt., Lbs. ¾-In.	1-In.
18	5	7¼	**28**	7½	9½
20	5½	7½	**30**	8⅓	10¾
22	6¼	8⅛	**32**	8¾	11
24	6⅓	8½	**34**	9	11½
26	7¼	9½	***36**	7	10½

*No carton this size.

Sizes and Prices—Effective September 25, 1937

Length Inches	¾-Inch I.P. Size Steel Each	Brass Each	1-Inch I.P. Size Steel Each	Brass Each
18	**$2.08**	**$5.60**	**$2.24**	**$6.08**
20	**2.16**	**5.60**	**2.24**	**6.56**
22	**2.24**	**5.76**	**2.32**	**7.04**
24	**2.24**	**6.16**	**2.32**	**7.44**
26	**2.32**	**6.32**	**2.48**	**7.92**
28	**2.48**	**6.56**	**2.64**	**8.56**
30	**2.64**	**7.04**	**2.80**	**8.88**
32	**2.72**	**7.44**	**3.04**	**9.38**
34	**3.04**	**7.92**	**3.28**	**10.24**
36	**3.20**	**8.32**	**3.60**	**10.72**

Globe Standard 1-Piece Furnace Coils



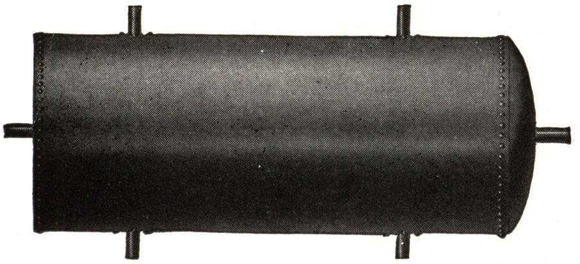
Made of seamless steel pipe. Not shipped in cartons but furnished with thread protectors.

Length Inches	¾-Inch I.P. Size Steel Each	Brass Each	1-Inch I.P. Size Steel Each	Brass Each
18	**$1.68**	**$4.48**	**$1.76**	**$5.04**
20	**1.76**	**4.56**	**1.84**	**5.60**
22	**1.76**	**4.88**	**1.84**	**6.08**
24	**1.84**	**5.12**	**2.00**	**6.56**
26	**1.92**	**5.28**	**2.08**	**7.04**
28	**2.08**	**5.60**	**2.24**	**7.38**
30	**2.16**	**6.00**	**2.40**	**8.32**
32	**2.24**	**6.32**	**2.56**	**8.56**
34	**2.48**	**6.72**	**2.72**	**9.04**
36	**2.64**	**7.20**	**2.88**	**9.68**

Black Hot Water Storage Tanks

Riveted, Brazed and Welded

Manufacturers' Standard Specifications Adopted Jan. 1, 1920



Each standard storage tank is tested to a hydrostatic pressure of 115 pounds to the square inch and is guaranteed for a working pressure of 75 pounds per square inch.

Each extra heavy storage tank is tested to a hydrostatic pressure of 150 pounds to the square inch, and is guaranteed for a working pressure of 100 pounds per square inch.

Hot water storage tanks have six 2-inch openings, two in top, two in bottom and one in each end.

Tanks with coils should be provided with manholes.

Cap. Gal.	Standard Tank Each	Standard Tank Weight Pounds	Ex. Heavy Tank Each	Ex. Heavy Tank Weight Pounds	Diam. In.	Lgth. Ft.	*For Coils Add Black Each	*For Coils Add Galv. Each
66	**$94.00**	235	**$102.00**	245	20	4	**$37.70**	**$45.50**
85	**104.00**	280	**112.00**	290	20	5	**39.66**	**50.06**
100	**109.00**	290	**124.00**	300	24	4	**46.16**	**54.60**
120	**122.00**	340	**137.00**	350	24	5	**48.10**	**58.50**
140	**135.00**	390	**150.00**	400	24	6	**50.06**	**62.40**
150	**143.00**	390	**165.00**	405	30	4	**46.16**	**54.60**
180	**160.00**	455	**182.00**	470	30	5	**48.10**	**58.50**
220	**177.00**	520	**199.00**	535	30	6	**50.10**	**62.40**
250	**194.00**	585	**216.00**	600	30	7	**52.00**	**66.30**
295	**211.00**	650	**233.00**	665	30	8	**53.96**	**70.20**
315	**206.00**	650	**264.00**	790	36	6	**66.30**	**80.60**
365	**228.00**	725	**294.00**	880	36	7	**70.20**	**85.80**
420	**250.00**	800	**324.00**	980	36	8	**74.76**	**91.00**
525	**294.00**	950	**384.00**	1170	36	10	**83.20**	**101.40**
430	**276.00**	820	**345.00**	990	42	6	**66.30**	**80.60**
500	**304.00**	910	**381.00**	1100	42	7	**70.20**	**85.80**
575	**332.00**	1000	**417.00**	1210	42	8	**74.76**	**91.00**
720	**388.00**	1180	**489.00**	1430	42	10	**83.20**	**101.40**
865	**444.00**	1360	**561.00**	1650	42	12	**91.66**	**110.50**
1000	**500.00**	1540	**633.00**	1870	42	14	**100.10**	**120.90**
750	......	....	**510.00**	1435	48	8	.....	.....
940	......	....	**596.00**	1690	48	10	.....	.....
1130	......	....	**682.00**	1950	48	12	.....	.....
1300	......	....	**768.00**	2200	48	14	.....	.....
1500	......	....	**854.00**	2460	48	16	.....	.....
1700	......	....	**940.00**	2710	48	18	.....	.....

Extras

Extra or larger openings can be furnished at the following prices, provided openings are located in shell or in center of either head. Prices on off-set flanges upon application.

Manhole in Head	each	**$39.00**
Manhole in Shell	each	**58.50**
Handhole in Head	each	**10.40**
Handhole in Shell	each	**10.40**

Galvanized tanks, prices on request.

Threaded Flanges for Riveted Tanks

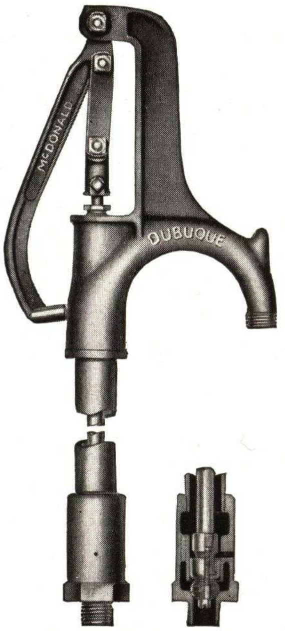
Size Flange Riveted....inches	2½	3	3½	4
Each	**$9.10**	**10.40**	**11.70**	**13.00**

Threaded Welding Flanges for Welded Tanks

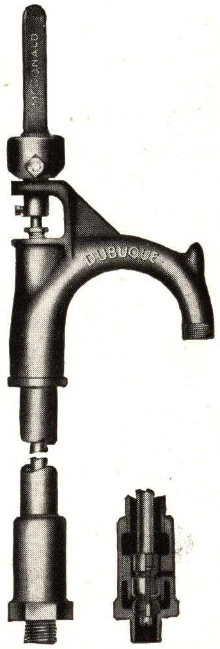
Size.........in.	1	1¼–1½	2	2½	3	3½	4
Each	**$2.40**	**3.00**	**3.60**	**4.56**	**5.20**	**5.86**	**6.50**

*All coils are 4-pipe. For 20-inch diameter tanks, coils are 1 inch I.P.S.; 24 and 30-inch diameter tanks, coils are 1¼ inch I.P.S.; 36 and 42-inch diameter tanks, coils are 1½ inch I.P.S.

McDonald Hydrants



No. E-5633, Lever Type



No. E-5634, Self-Closing Type

Ideal for parks, cemeteries, filling stations, suburban homes and farms. Provides ample and convenient water supply and valuable additional fire protection on farms.

No. E-5633 Freezeless Lever Type Hydrants

Lever and toggle action. Quickly operated. Only one adjustment made by adjusting set-screw against operating rod. Valve is open when handle is raised to top position and remains open until handle is returned to closed position.

Cast iron head, handles and fittings. Heavy cast bronze valve chamber. Galvanized pipe standard, 1-inch on ¾-inch size; 1¼-inch on 1-inch size. Valve equipped with reversible beveled rubber disc and treated cup leather.

Cup leather covers drain hole in valve when open, and opens drain hole when closed, permitting water in standard to drain out to eliminate freezing.

All working parts can be easily removed for inspection or replacement, by taking off the cast iron head and pulling parts up through the standard.

No. E-5634 Self-Closing Type Hydrants

Same as above except valve is open when handle is in tilted position and is closed by spring action when straight up. Can be locked open by tilting handle to 90 degree position.

	¾-Inch					1-Inch				
Set in Ground.........feet	2	3	4	5	6	2	3	5	5	6
Weight: No. E-5633.....lb.	15	17	19	21	23	19	21	24	26	29
No. E-5634.....lb.	15	17	19	21	23	19	21	24	26	29

We Carry

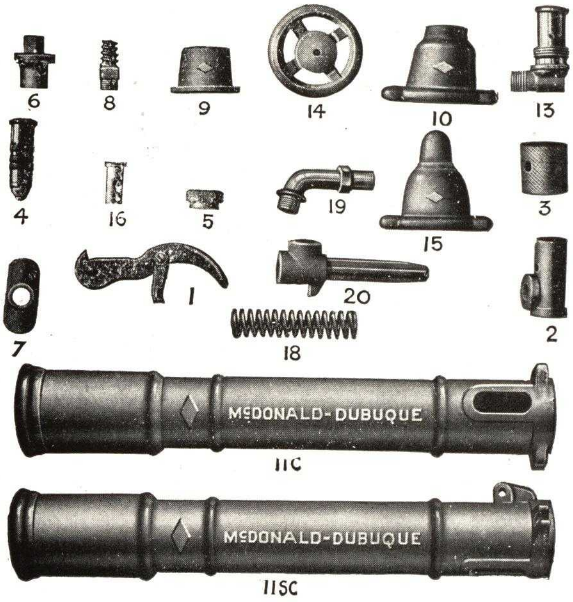
A REPRESENTATIVE STOCK

of Goods Listed in This Catalog

In some instances, we present information and listings of sizes and varieties not in stock but readily available.

YOUR ORDERS ARE INVITED for everything listed—and anything akin to these goods needed in your business.

Repairs for McDonald Hydrants and Street Washers



Compression Hydrant Repairs

No.	Name of Part	Price, Each Size, Inches	
		¾	1
11C	Body	$2.00	$2.00
10	Cap	.60	.60
9	Cone	.30	.30
14	Wheel Handle	.35	.35
6	Iron Nut	.40	.40
8	Brass Screw	.75	.75
13	“ Valve Body	1.75	2.25
4	“ “ Plunger	1.00	1.50
..	Valve Complete with Plunger	2.50	3.25
19	Brass Spout	1.00	1.35
5	“ Union Nut	.20	.40
16	“ Tail Piece	.20	.35
2	Tee for Nozzle	.75	.75
3	Coupling, Faced and Drilled	.40	.60
7	Sliding Plate for Spout	.20	.20
..	Cupped Plunger Leather	.08	.10
..	Rubber Seat Ball	.10	.15
..	Leather Washer	.05	.05
..	Screw to Fasten Handle	.05	.05
..	Bolts	.10	.10

Self-closing Hydrant Repairs

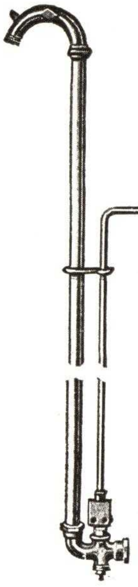
No.	Name of Part	Price, Each Size, Inches	
		¾	1
11SC	Body	$2.00	$2.00
15	Cap	.60	.60
1	Lever Handle	.50	.50
..	Latch or Dog	.20	.20
20	Tee for Spout	.75	.75
18	Spring	.50	.50

All other parts are same as compression hydrant above.

Street Washer Repairs

Name of Part	Price, Each Size, Inches	
	¾	1
Box	$1.00	$1.00
Plate	.25	.25
Cone	.25	.25
Key	.25	.25
Iron	.40	.40
Brass Swivel and Screw	1.75	2.25
“ Valve Body	1.75	2.25
“ Plunger	1.00	1.50
“ Lead Pipe Union	.40	.75
Cap Bolts	.05	.05
Pipe Coupling	.50	.75
Cupped Plunger Leathers	.15	.20
Rubber Seat Ball	.20	.25

No. E-5643 McDonald Pipe Hydrants



Standard red metal hydrant cock, with black pipe.

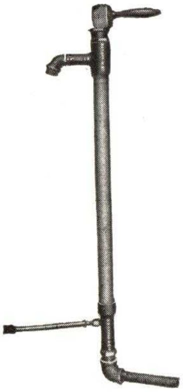
Constructed with cast iron gooseneck.

Threaded for hose coupling.

An extra strong rod operates the hydrant cock.

Can be furnished to set 4, 5, or 6 feet in the ground for either ¾ or 1-inch size pipe.

Vogel Frost Proof Garage Hydrants



For use in service stations, farms, dairies, etc., or wherever a supply of water is needed outside all year.

Has a frost proof supply valve with bevel valve seat that will not retain pipe cuttings, sediment, etc.

The by-pass is in the plunger, so that when the rod is withdrawn the waterway is straight and clear with no concealed by-pass in the valve body.

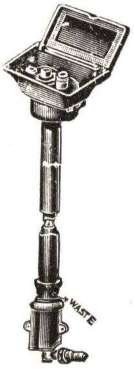
Pipe casing is galvanized.

Made in 3, 4, and 5-foot lengths.

Complete with Lead Waste Connection............each **$7.50**

No. 36 Total Eclipse Street Washers

Compression Type, Non-Freezing



Non-freezing, positive automatic drain. Closes against the pressure without reaction. Valve working parts of brass. Removal of nozzle and top cap permits withdrawal of interior parts for replacement with ease and without disturbing connection to supply pipe. Sand cup, valve protector, furnished on each street washer.

Specify if full ¾, 1 or 1¼-inch inlet connection is desired.

The ¾-inch street washer has combination ½-inch lead or iron pipe or ¾-inch iron pipe inlet connection. The 1-inch street washer has combination ¾-inch lead or iron pipe or 1-inch iron pipe inlet connection. The 1¼-inch street washer has combination 1-inch lead or iron pipe or 1¼-inch iron pipe inlet connection.

The 1½-foot list applies on any shorter length.

Set in Ground Feet	Size, Inches ¾ Each	1 Each	1¼ Each	Set in Ground Feet	Size, Inches ¾ Each	1 Each	1¼ Each
1½	**$6.40**	**$9.90**	**$18.35**	**4**	**$8.40**	**$12.90**	**$20.35**
2	**6.80**	**10.50**	**18.75**	**4½**	**8.80**	**13.50**	**20.75**
2½	**7.20**	**11.10**	**19.15**	**5**	**9.20**	**14.10**	**21.15**
3	**7.60**	**11.70**	**19.55**	**6**	**10.00**	**15.30**	**21.95**
3½	**8.00**	**12.30**	**19.95**	..	.....	.....	.....

Total Eclipse Hydrants

Non-freezing, positive automatic drain. Closes against pressure without reaction. Valve and working parts of brass. Interior parts easily replaced. Sand cup and valve protector furnished with each hydrant.

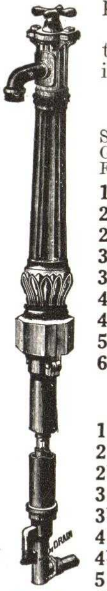
Specify if full ¾, 1 or 1¼-inch inlet connection is desired.

The 1½-foot list applies on any shorter length.

The ¾-inch hydrant has combination ½-inch lead or iron pipe or ¾-inch iron pipe inlet connection.

The 1-inch hydrant has combination ¾-inch lead or iron pipe or 1-inch iron pipe inlet connection.

The 1¼-inch hydrant has combination 1-inch lead or iron pipe or 1¼-inch iron pipe connection.



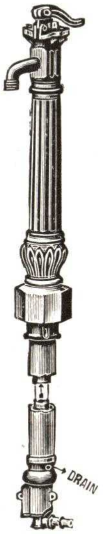
No. 1

No. 1—Compression Type

Set in Ground Feet	¾-Inch Each	1-Inch Each	1¼-Inch Each
1½	$7.80	$12.80	$20.00
2	8.20	13.40	20.50
2½	8.60	14.00	20.90
3	9.00	14.60	21.30
3½	9.40	15.20	21.70
4	9.80	15.80	22.10
4½	10.20	16.40	22.50
5	10.60	17.00	22.90
6	11.40	18.20	23.70

No. 7—Self-Closing Type

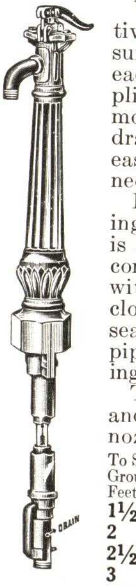
1½	$9.60	$15.20	.....
2	10.00	15.80	.....
2½	10.40	16.40	.....
3	10.80	17.00	.....
3½	11.20	17.60	.....
4	11.60	18.20	.....
4½	12.00	18.80	.....
5	12.40	19.40	.....
6	13.20	20.60	.....



No. 7

No. 9 Total Eclipse Hydrants

Self Closing Type, Anti-freezing



Valve and working parts are of brass. Positive automatic drain closes against the pressure. Sand cup, valve protector, furnished with each hydrant. Detachable handle can be supplied with ¾-inch size self closing hydrant. Removal of nozzle and top cap permits withdrawal of interior parts for replacement with ease and without digging up or disturbing connection to supply pipe.

Plunger operates up and down without twisting movement or torsional strain. When water is admitted into the valve, the drain outlet is completely sealed by cup washer on plunger without waste of water. When the valve is closed after operating, the drain outlet is unsealed or opened, allowing all water in standpipe to escape, preventing possibility of freezing. Has straight inlet at bottom for iron pipe.

The ¾-inch hydrant has ¾-inch hose nozzle and inlet. The 1-inch hydrant has 1-inch hose nozzle and inlet.

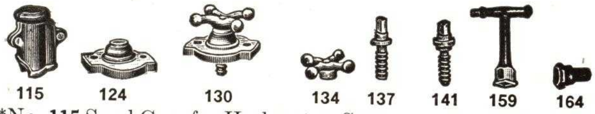
To Set In Ground Feet	¾-Inch Each	1-Inch Each
1½	$9.60	$15.20
2	10.00	15.80
2½	10.40	16.40
3	10.80	17.00
3½	11.20	17.60
4	$11.60	$18.20
4½	12.00	18.80
5	12.40	19.40
6	13.20	20.60

Specialties

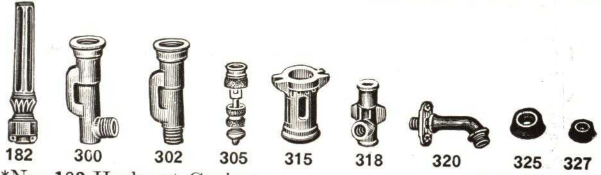
- It is not practical for us to list many items used for special service.
- Let us help you with problems where special material is required.

Total Eclipse Hydrant and Street Washer Replacement Parts

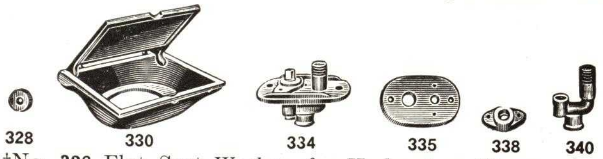
¾-Inch



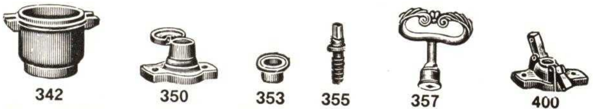
*No. **115** Sand Cup, for Hydrant or Street Washer	each	$.32
†No. **124** Hydrant Cap, with Bolts	each	.24
†No. **130** Hydrant Cap, Handle and Screw, with Bolts	each	1.12
†No. **134** Hydrant Handle	each	.32
†No. **137** Hydrant Screw	each	.56
No. **141** Street Washer Screw	each	.56
No. **159** Street Washer Key, ½-Inch Sq. Opening	each	.12
*No. **164** Brass Coupling for Valve Body, for Hydrant or Street Washer	each	.48



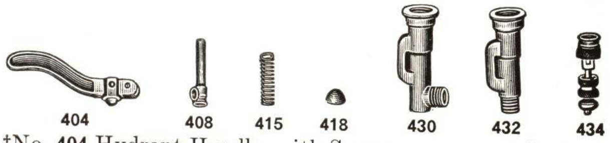
*No. **182** Hydrant Casing	each half	$.96
†No. **300** Regular Brass Valve Body, for Hydrant or Street Washer	each	2.00
†No. **302** Special Brass Valve Body with Inlet from Bottom, for Hydrant or Street Washer	each	2.00
†No. **305** Valve Plunger, for Hydrant or St. Washer	each	.80
*No. **315** Iron Hydrant Nozzle Section	each	.96
†No. **318** Brass Hydrant Nozzle Coupling	each	.72
*No. **320** Hydrant Nozzle and Plate	each	.64
*No. **325** Large Top Valve Plunger Cup Washer, for Hydrant or Street Washer	per dozen	.80
*No. **327** Small Valve Plunger Cup Washer, for Hydrant or Street Washer	per dozen	.70



†No. **328** Flat Seat Washer, for Hydrant or Street Washer	per dozen	$.36
No. **330** Street Washer Box, with Bolts	each	.80
No. **334** Street Washer Plate, Nozzle and Screw, with Bolts	each	2.40
No. **335** Street Washer Plate, with Bolts	each	.32
No. **338** Street Washer Brass Nozzle Section	each	.80
No. **340** Street Washer Cap	each	.16



No. **342** Street Washer Neck, with Bolts	each	$.48
†No. **350** Cap for Nos. 2 and 4 Key Hydrant	each	.48
†No. **353** Iron Bushing, for Nos. 2 and 4 Hydrant	each	.16
†No. **355** Brass Screw, for Nos. 2 and 4 Key Hydrant	each	.56
No. **357** Key, for Nos. 2 and 4 Hydrant	each	.12
‡No. **400** Hydrant Cap, with Iron Catch and Bolts	each	.80



‡No. **404** Hydrant Handle, with Screw	each	$.80
‡No. **408** Brass Hydrant Stem	each	.80
‡No. **415** Hydrant Steel Spring	each	.32
‡No. **418** Hydrant Rubber Seat Washer	per dozen	.90
‡No. **430** Regular Hydrant Brass Valve Body	each	2.00
‡No. **432** Special Hydrant Brass Valve Body	each	2.00
‡No. **434** Hydrant Valve Plunger	each	.88

*Compression or self-closing. †Compression. ‡Self-closing.

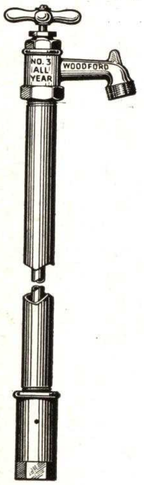
Woodford Freezeless Ground Hydrants

Especially suitable for farms, private and public gardens, lawns and parks, cemeteries, gasoline filling stations, stock yards, garages, railroads, and industrial plants.

Hydrant cannot freeze, water is cut off below frost line and casing automatically drains through vent at every operation.

The 1-inch size hydrants are larger throughout and have a greater capacity than the ¾-inch size. All are equipped with galvanized pipe for the outside casing. For the inside operating plunger a ⅜-inch pipe is used, which prevents misalignment and excessive and uneven wear on valve parts, as ⅜-inch pipe is larger in diameter and more rigid than pump rod.

Specify depth to set in ground.



No. 3 All-Year

Sturdy cast iron head and prong wheel handle. All inside parts may be withdrawn for inspection or repair through head casting by removing large nut.

Stands approximately 2 feet above ground.

¾-Inch I.P. Inlet, ¾-Inch Hose Nozzle

Size of pipe casing, 1 inch.

To Set in Ground..ft.	2	3	4	5	6
Each........	$7.90	8.10	8.35	8.55	8.75
Weight....lb.	12	14	16	18	20

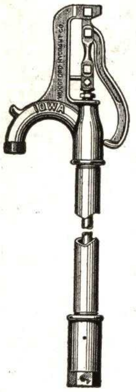
1-Inch I.P. Inlet, 1-Inch Hose Nozzle

Size of pipe casing, 1¼ inches.

To Set in Ground.ft..	2	3	4	5	6
Each........	$8.50	8.90	9.25	9.65	10.00
Weight....lb.	19.5	22	24.5	27	29.5

Iowa

Quick action lock lever control. No springs to cause trouble, no screw threads to wear out.



All inside parts may be withdrawn from casing for inspection or repair by removing hydrant head without digging up or disturbing valve chamber or pipe casing. Only one adjustment, made by adjusting set screw against operating rod.

Stands approximately 2½ ft. above ground.

¾-Inch I.P. Inlet, ¾-Inch Hose Nozzle

Size of pipe casing, 1 inch.

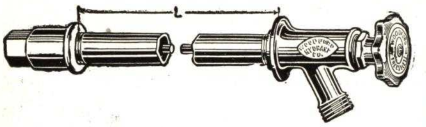
To Set in Ground...ft.	2	3	4	5	6
Each.........	$7.90	8.10	8.35	8.55	8.75
Weight.....lb.	15	17	19	21	23

1-Inch I.P. Inlet, 1-Inch Hose Nozzle

Size of pipe casing, 1¼ inches.

To Set in Ground..ft.	2	3	4	5	6
Each........	$8.50	8.90	9.25	9.65	10.00
Weight....lb.	18.5	21	23.5	26	28.5

No. 10 Woodford Freezeless Wall Hydrants



Protected against freezing. Castings of high quality brass. Extended type head.

Furnished with wheel handle key which may be detached if desired and used as a loose key.

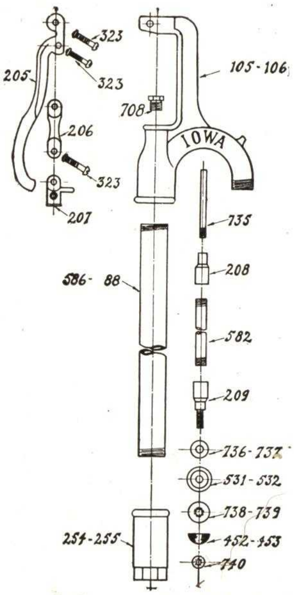
Furnished with either ½-inch or ¾-inch female pipe thread inlet. Both sizes are the same except for size of inlet thread. Can also be furnished with inlet reamed for ½-inch or ¾-inch copper tube at same prices.

Regularly furnished with ¾-inch galvanized pipe casing and ⅜-inch round galvanized valve rod and standard valve seat washer.

Threaded standard ¾-inch hose thread. Plain brass finish.

Dimension L....in.	6	8	10	12	14	18	24
No...........each	$1.80	1.80	1.80	1.85	1.90	2.00	2.15
Approx. Weight.lb.	2.25	2.5	2.75	3	3.25	3.75	4.5

Repair Parts for Iowa Freezeless Hydrants



Made in 2 sizes as follows: The ¾-inch size attaches to ¾-inch service pipe and has a 1-inch iron pipe casing. The 1-inch size attaches to 1-inch service pipe and has a 1¼-inch iron pipe casing. When ordering repair parts, be sure to determine proper part numbers to suit size of hydrant with which parts are to be used.

Part Name	¾-Inch Part No.	¾-Inch Each	1-Inch Part No.	1-Inch Each
Head...........................	106	$1.50	105	$1.60
Lever...........................	205	.40	205	.40
Link...........................	206	.22	206	.22
Clevis, With Set Screw...........	207	.30	207	.30
Reducing Coupling..............	208	.20	208	.20
Plunger Casting................	209	.30	209	.30
Bottom Cap....................	255	1.80	254	1.95
Set Screw for Clevis.............	302	.04	302	.04
Clevis Bolt.....................	322	.02	322	.02
Lever and Link Bolt............	323	.02	323	.02
Ball Valve Rubber..............	452	.18	453	.20
Cup Leather....................	531	.18	532	.22
Pipe Stem (per Foot)...........	532	*	582	*
Pipe Casing (per Foot)..........	586	*	588	*
Packing Nut....................	708	.26	708	.26
Pump Rod Stem................	735	.16	735	.16
Plain Iron Washer..............	737	.01	736	.01
Threaded Iron Washer..........	739	.08	738	.08
Round Brass Nut...............	740	.06	40	.06
Plunger Assembly..............	†A3209	.80	‡A1209	.85

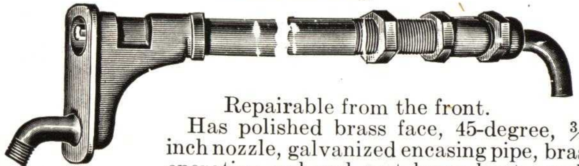
*Prices upon application.

†Consists of Nos. 209, 737, 531, 739, 452, and 740.

‡Consists of Nos. 209, 736, 532, 738, 453, and 740.

No. 555 Eclipse Government Type Wall Hydrants

Anti-Freezing



Repairable from the front.

Has polished brass face, 45-degree, ¾-inch nozzle, galvanized encasing pipe, brass operating rod and cast brass bent supply coupling threaded for ¾-inch iron pipe.

Any intermediate length takes price of next longer size.

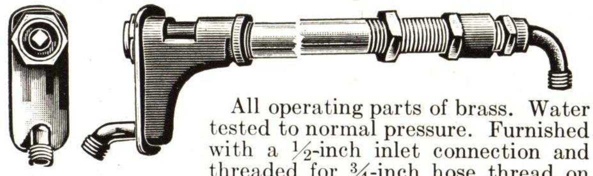
For Wall, In.	Each	For Wall In.	Each	For Wall In.	Each	For Wall In.	Each	For Wall In.	Each
9	$7.50	15	$9.30	20	$10.80	26	$12.60	32	$14.40
11	8.10	16	9.60	22	11.40	28	13.20	34	15.00
13	8.70	18	10.20	24	12.00	30	13.80	36	15.60

For nickel-plated face, add 60 cents.

For chromium-plated face, add $1.20.

Eclipse Improved Wall Hydrants

Non-Freezing



All operating parts of brass. Water tested to normal pressure. Furnished with a ½-inch inlet connection and threaded for ¾-inch hose thread on the ¾-inch hydrant; ¾-inch inlet connection and threaded for 1-inch hose thread on the 1-inch hydrant. Specify if full ¾ or 1-inch inlet connections are required. Can be had with straight coupling. Length of hydrant computed on thickness of wall. Detachable operating key provided with hydrant.

Approximate weight of ¾-inch hydrant for 15-inch wall; 6 pounds, plus or minus per inch; of 1-inch hydrant, 8 pounds, plus or minus 3 ounces per inch.

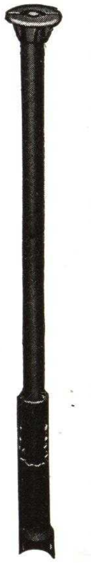
For Wall In.	No. 4 Straight Nozzle ¾-Inch Each	No. 4 Straight Nozzle 1-Inch Each	No. 5 Bent Nozzle ¾-Inch Each	No. 5 Bent Nozzle 1-Inch Each
9	$4.90	$9.80	$6.00	$10.80
11	5.25	10.22	6.30	11.16
13	5.60	10.64	6.60	11.52
15	5.81	11.06	6.78	11.88
16	5.95	11.27	6.90	12.05
18	6.30	11.69	7.20	12.84
20	6.65	12.11	7.50	12.78
22	7.00	12.53	7.80	13.14
24	7.35	12.95	8.10	13.50
26	7.70	13.37	8.40	13.86
28	8.05	13.79	8.70	14.22
30	8.40	14.21	9.00	14.58
32	8.75	14.42	9.30	14.94
34	9.10	14.63	9.60	15.30
36	9.45	14.77	9.90	15.66

Any intermediate length takes next longer list.

Prices shown are for polished brass face, for nickel-plated face add 60 cents; for chromium-plated face add $1.20.

Modern Service Boxes

Minneapolis Pattern



Design of lower section permits of easy adjustment, and prevents upper section from being pulled out of lower section, or injury to curb cock.

The base of the 24-inch lower section is tapped with a 1½ or 2-inch standard thread.

In the upper end of the lower section a brass spring is compressed by the upper section, thus holding the member in any desired position and permitting easy adjustment.

The top is a casting of heavy design, in which the brass bushing is cast to receive the removable plug.

Upper section consists of 1¼ inch standard steel pipe cut to required length, one end of which is provided with a swedged lug which passes through groove in lower section.

Plug and lower section are made of a good quality of gray iron. Plug is threaded with a standard pipe thread and has a pentagon nut on top.

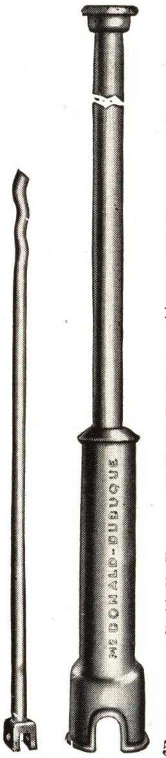
All parts dipped in black asphaltum paint, thus assuring all surfaces inside and outside being well covered.

Size No.	Black Pipe Each	Galv. Pipe Each	Extension Feet	Approx. Wt. Lbs.	Size No.	Black Pipe Each	Galv. Pipe Each	Extension Feet	Approx. Wt. Lbs.
13	....	....	2 to 3	15¼	17	....	....	5½ to 7	24¼
13½	....	....	2 to 3½	16½	17½	....	....	6 to 7½	25½
14	....	....	2½ to 4	17½	18	....	....	6½ to 8	26½
14½	....	....	3 to 4½	18½	18½	....	....	7 to 8½	27¾
15	....	....	3½ to 5	19¾	19	....	....	7½ to 9	29
15½	....	....	4 to 5½	20¾	19½	....	....	8 to 9½	30¼
16	....	....	4½ to 6	22	20	....	....	8½ to 10	31½
16½	....	....	5 to 6½	23¼	...	....	....	....	

No. E-5601 McDonald Extension Service Boxes

Barry Pattern

With 1-Inch Upper Section



Suitable for service stops ½-inch to 1-inch.

Made in two telescopic sections. Upper section is 1-inch black pipe, with a malleable iron cap or cover, which screws into a brass collar at the top of the upper or pipe section. Lower end of pipe has a notched flange.

Heavy cast iron lower section straddles the service pipe and shields the service stop. A rib on inside of lower section engages slot in the flanged lower end of pipe, so that cap can be tightened, or removed, as the pipe cannot turn.

Rod or key is furnished as a part of the service box, and has a drilled clamp or socket to attach to service stop. This rod is so bent that the flat end at top of rod is always in the center of the 1-inch pipe.

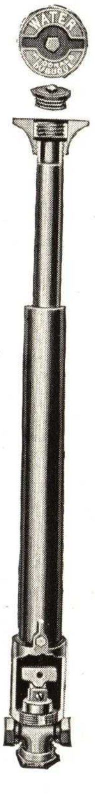
Extension of 1-foot is regular.

Extended lengths: 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, and 8 feet.

No. E-5614 McDonald Extension Service Boxes

Minneapolis Pattern

With 1¼-Inch Upper Section



For ½ to 1-inch size Minneapolis Pattern curb stops. Base is tapped 1½-inch for ¾-inch and smaller curb stops, and 2 inches for 1-inch curb stops.

Base is large which insures that the box will remain where placed.

Lid is heavy cast iron, threaded to fit the 1¼-inch upper section, and cannot be removed after box is installed. Removal of the iron pentagon screw makes an opening for the shut-off rod to enter the box. This screw, which screws into the brass bushing cast in the cap, can always be removed using a pentagon socket wrench.

A bronze coil spring, in top of base section, encircles and presses on the pipe, holding upper section where desired.

Upper section, being 1¼-inch pipe can be lengthened or shortened as necessary, to meet some special location.

Regular extension, 1½-foot. Full extended lengths are listed. Box can be installed 1½ feet shorter, by pushing the pipe down to the bottom of the base section. A brass set-screw in base section prevents pipe going down too far.

Size No.	Extension Feet	Approx. Wt. Lb.	Size No.	Extension Feet	Approx. Wt. Lb.
M3	2 to 3	15	M6	4½ to 6	22
M3½	2 to 3½	16	M6½	5 to 6½	23
M4	2½ to 4	17	M7	5½ to 7	24
M4½	3 to 4½	18	M7½	6 to 7½	25
M5	3½ to 5	20	M8	6½ to 8	26
M5½	4 to 5½	21	M8½	7 to 8½	28

No. 2000 New Pattern Service Boxes

No. 88 Stationary

No. 2030 Enlarged Base for Service Boxes

No. 93-E 2½-Inch Shaft

No. 2010 Cover

No. 2010 Cover

No. 2041 Comb. Keys

With 2½-Inch Shaft

No.	Extension Inches	Complete Each	Top Section Complete Each	Bottom Section Each	No. 2045 Rods and Rings, Extra Each
88	12 Stationary	$1.35	....	....	....
89-A	15 to 21	1.25	$.75	$.50	$.40
90-B	18 to 24	1.35	.75	.60	.40
90-C	21 to 27	1.45	.85	.60	.40
91-C	24 to 33	1.55	.85	.70	.50
92-C	30 to 39	1.65	.85	.85	.50
92-D	30 to 42	1.85	1.00	.85	.50
93-D	36 to 48	2.00	1.00	1.00	.50
93-E	36 to 54	2.15	1.15	1.00	.60
94-E	42 to 60	2.30	1.15	1.15	.60
95-E	48 to 66	2.45	1.15	1.30	.60
100-E	54 to 72	2.65	1.15	1.50	.70
100-F	54 to 78	2.80	1.30	1.50	.70
101-F	60 to 84	2.90	1.30	1.60	.70
95-G	48 to 84	2.95	1.65	1.30	.70
100-G	54 to 90	3.15	1.65	1.50	.70
101-G	60 to 96	3.25	1.65	1.60	.85
110-G	66 to 102	3.40	1.65	1.75	.85

With Enlarged Bases, No. 2030, Add..............each $.70

With 3-Inch Shaft

No.	Extension Inches	Complete Each	Top Section Complete Each	Bottom Section Each	No. 2045 Rods and Rings, Extra Each
0	10 Stationary	$1.55	....	....	....
1	17 to 22	1.70	$.90	$.80	$.40
1½	21 to 28	1.95	1.00	.95	.40
2	27 to 39	2.20	1.10	1.10	.50
3	33 to 48	2.60	1.35	1.25	.50
4	39 to 58	2.85	1.45	1.40	.60
5	45 to 66	2.95	1.45	1.50	.60
7	51 to 72	3.30	1.45	1.85	.70

Bell Bottoms, No. 2031, Cast on Btm. Sec. Add..each $1.25

Parts

No.	Description	2½-Inch Each	3-Inch Each
2018	Brass Screws	$.15	$.15
2010	Covers, Water or Gas	.20	.25
*2030	Enlarged Bases	.70	.80
*2031	Bell Bottoms	1.25	1.25
2032	Foot Pieces	.25	.30
2040	Stop Box Keys	.20	.20
2041	Combination Keys, 18-Inch	1.00	1.00
....	Combination Keys, 27-Inch	1.25	1.25
....	Combination Keys, 36-Inch	1.50	1.50

No. 2020 Extension Pieces

	For 2½-Inch Boxes				For 3-Inch Boxes		
No.	151	152	153	154	155	156	157
To Extend......in.	9	16	28	33	20	24	30
No. 2020.......each	$.60	.75	.95	1.05	.90	1.00	1.15

Dimensions of Bases

	No. 2000 Regular		No. 2030 Enlarged		No. 2031 Bell Bot.
Dimension	2½-In.	3-In.	2½-In.	3-In.	3-In.
Inside Diameter of Base.....in.	3⅜	4	5	5⅞	4¾
Height of Base..............in.	5	5¾	4¾	5½	12
Opening in Base, Height.....in.	2¾	3	3⅝	3¾	2¾
Opening in Base, Width.....in.	2¾	3	3	3½	3
Spread Across Foot.........in.	6½	8	8¾	9½	8¼

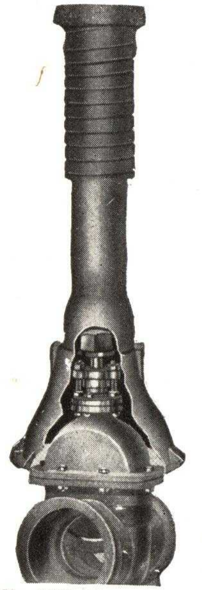
*Enlarged bases, No. 2030, are inserted in regular bases to accommodate 2-inch stop cocks and increase height of boxes 6 inches. Bell bottoms, No. 2031 are inserted in regular bases to accommodate wheel-operated valves and increase height 12 inches.

When ordering specify whether water or gas covers required.

Extension Valve Boxes and Parts

Three Piece Valve Boxes with 5¼-Inch Shafts

No. 3002, Screw Type—No. 3102, Slip Type



No. 3002, Screw Type

Size	Complete Each	Top & Cover Each	Bottom Each	Extension In.
AAA	$6.00	$3.50	....	*17
AA	7.25	3.00	$1.75	26–30
A	7.90	3.50	1.90	33–42
B	8.20	3.50	2.20	36–48
C	8.50	3.50	2.50	45–54
CC	9.00	3.50	3.00	51–60
D	9.45	4.45	2.50	45–66
E	10.00	3.50	4.00	63–72
F	10.95	4.45	4.00	63–84
G	11.90	4.45	4.95	75–96

*Stationary.

Drop covers marked Water furnished unless otherwise specified.

Above prices are with No. 6 round base which is regularly furnished.

Base No.	Each	Shape of Base	Size Valve In.	Ht. In.
4	$2.00	Round	6 or Smaller	8
6	2.50	Rd. or Oval	8 or Smaller	11
8	3.50	Round	12 or Smaller	11
140	2.50	Dome	24 or Smaller	5
160	3.50	Oval	16 or Smaller	9½
162	6.00	Oval	20 or Smaller	10
16	8.50	Rd. or Oval	16 or Smaller	15¼

For valve boxes with any of the above bases, add or deduct difference in price as compared with No. 6 base.

5¼-Inch Valve Box Extension Sections

No. 58, Screw Type, No. 58A Slip Type, Increasing Length 14 Inches..........................each $1.75

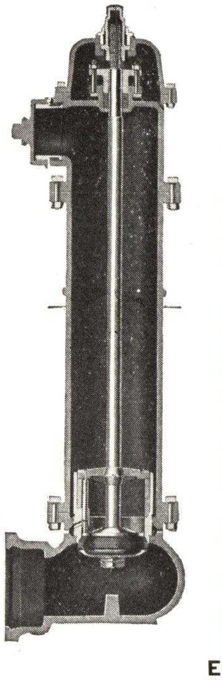
Valve Box Covers

Drop Cover

Drop Covers..............	each	$.88
Drop Lock Covers.........	each	1.25
Flange Covers............	each	1.00

Flange Cover

Waterous Compression Fire Hydrants



Heavily constructed throughout. Waterway is exceptionally large.

The removable head which contains the hose nozzles, permits the nozzles to be turned in any direction. This design also permits of raising grade line without digging up the hydrant. The all-bronze drain never rots nor cuts out. The screw mechanism can be lubricated through the oil hole. National standard thread is recommended whenever possible. Standard hydrant is equipped with two 2½-inch hose nozzles.

When ordering give distance from grade line to top of pipe connection, or depth of trench. Send hose coupling for thread sample; give size and shape of nut; number and size of hose nozzles; diameter of valve opening; diameter of pipe connection. If Waterous Hydrants are in service the thread and operating nut record are kept at the factory.

State if hydrant is to open by turning to left or right.

Size In.	Depth Trench Feet	Hub End Connection Inches	Price Each	Add or Deduct for Each 6-inch Variation in Length
4	5	4 or 6	$72.40	$1.65
5	5	4 " 6	91.70	2.40
6	5	6	112.60	2.80

Extra Equipment

Description	Price Each
Steamer Connection................................	$8.85
Extra 2½-inch Hose Nozzle..........................	3.60
Hub End Connection, 8-inch.........................	1.65
Flanged End, 4-inch................................	1.65
" " 6 "	2.40
" " 8 "	2.45

Directions for Ordering Fire Hydrants

Size of Hydrant.—Size of hydrant is determined by the diameter of valve opening.

Size and Style of Bottom Connection at Inlet.—Hub end bottom connection for standard water main pipe is furnished unless otherwise specified. However, threaded, flanged, spigot, matheson, lock joint and wood pipe inlets can be supplied when desired.

Length in Ground.—Length is determined by the depth of trench hydrant will set in, measuring from surface of ground line to bottom of pipe.

Number and Size of Hose Nozzles.

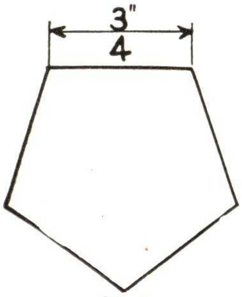
Number and Size of Steamer Nozzles.

Gage of Thread.—If possible send old coupling, outside thread preferred. Sample unnecessary when National (American) Standard or iron pipe hose thread is desired.

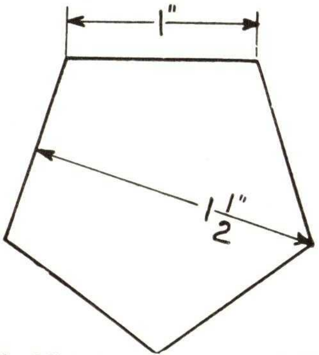
Size and Form of Nut to Open Hydrant.—The nut for opening hydrant and nut on nozzle cap will always be made pentagon (5 sided), unless otherwise ordered. Where an established wrench nut is in use, send template of same or nozzle cap. Sample is unnecessary when National (American) Standard operating nut is used.

Pentagon Nut
Measure Side

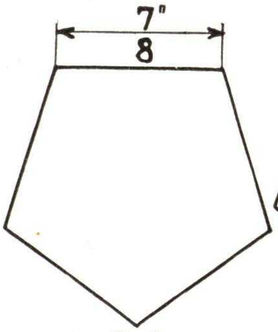
Square Nut
Measure Square



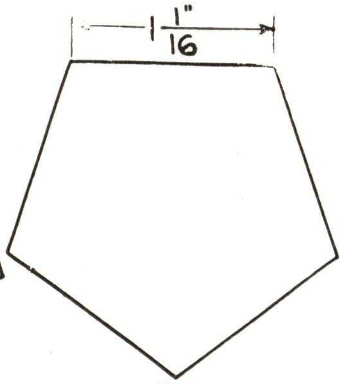
No. 1



No. 3 National (American) Standard



No. 2



No. 4

State Whether to Turn to Left or Right to Open.—

Unless otherwise ordered, hydrant will be made to turn to left in opening. Samples are not necessary on repeat orders, simply refer to previous order and date.

Information Blanks.—Blank for gage of thread, size of wrench nut and operation of hydrant, furnished upon request.

New Installations

When wrench nut and gage of thread is not established, National (American) Standard adopted by the National Board of Fire Underwriters, as follows, is recommended:

Hose Nozzle.—2½-inch size, measuring 3 1/16-inch O.D. of thread by 7½ threads to the inch.

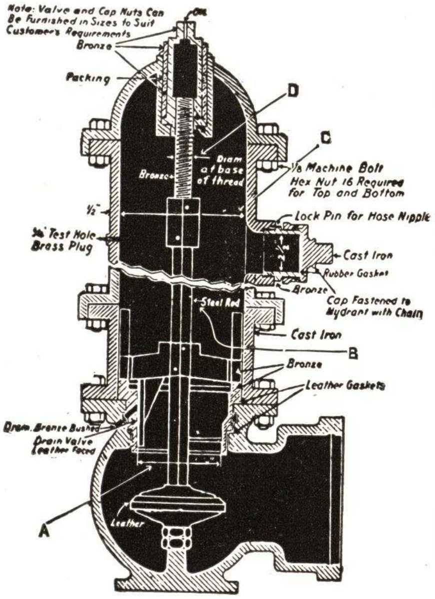
Steamer Nozzle.—4½-inch size, measuring 5¾-inch O.D. of thread by 4 threads to the inch.

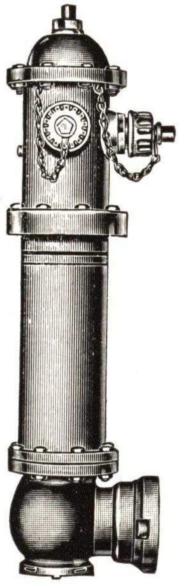
Wrench Nut.—Pentagon, measuring 1½ inches from flat to apex. Hydrants to operate by turning to left to open.

Kupferle Improved Fire Hydrants

Non-Freezing, Closing with the Pressure

With Revolving Head


Note: Valve and Cap Nuts Can Be Furnished in Sizes to Suit Customers Requirements
Oil
Bronze
Packing
D
C
Diam at base of thread
Bronze
⅞ Machine Bolt Hex Nut 16 Required for Top and Bottom
½"
Lock Pin for Hose Nipple
⅜" Test Hole Brass Plug
Cast Iron
Rubber Gasket
Bronze
Cap Fastened to Hydrant with Chain
Steel Rod
Cast Iron
B
Bronze
Leather Gaskets
Drain Bronze Bushed
Drain Valve Leather Faced
Leather
A



Nos. 65, 70, 75, 100 and 125 hydrants are of the same design and construction, except the size of the valve openings (A). All conform to the specifications of the American Waterworks Association, and No. 100 has been approved by the National Board of Fire Underwriters and the Associated Factory Mutual Fire Insurance Companies.

Hydrants are flanged 2 inches above the pavement line, and will automatically shut off should the barrel be broken.

The positive automatic drain which prevents the hydrant from freezing is bronzed bushed and is of exceptionally quick action.

Ample provision has been made for easily oiling the operating screw so that it turns freely at all times.

Iron parts are made of the best grade of cast iron and all moving parts of manganese bronze having a tensile strength of upwards from 50,000 pounds.

All working parts may be easily and quickly removed for replacement or inspection from the top of the hydrant by one man without disturbing any connections other than the top cap. These working parts are of manganese bronze.

Extension pieces can be furnished at a nominal price for bolting between the flanges of the body and bottom, which with the proper lengthening of the operating rod enables the user to easily change the depth of bury should the occasion arise.

Instructions for Inspecting or Replacing Parts

Remove top cap bolts. Turn operating screw in regular direction for opening hydrant until cap comes off far enough to be easily turned and lifted off by hand. After removing cap, put repairing wrench over operating rod and push down until settled. Turn repairing wrench in regular direction for opening hydrant until it turns freely, then the entire inside mechanism can easily be lifted out. To reassemble, reverse these operations.

	Measurements Inches				Approx. Wts. Lbs. *5 Ft. Hydrant Inlet, In.			Approx. Wts. Lbs.
No.	A	B	C	D	4	6	8	Add for Less 6 In.
65	4¼	1	7	⅞	430	440	470	15
70	4½	1	7	⅞	460	470	500	17
75	5	1	7	⅞	470	480	510	17
100	5½	1¼	8	1 1/16	625	635	645	22
125	6	1¼	8	1 1/16	625	635	645	22

For steamer nozzle add 20 pounds to weight, for extra 2½-inch nozzle add 7 pounds.

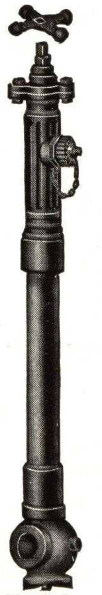
Prices include operating wrench and repairing wrench.

Prices upon application.

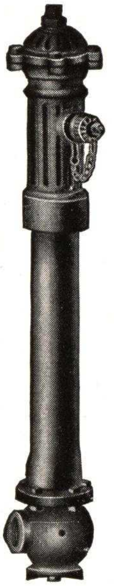
*Weights for hydrant include two nozzles.

Eclipse Fire Hydrants

Non-Freezing



No. 2-A



No. 2

The No. 2-A, 1¼-in. and 1½-in. with a 1½-in. valve opening and 1½-in. standpipe and the No. 2 with 2$\frac{1}{16}$-in. valve opening and a 3-in. standpipe, are designed for private corporation use or where something smaller than a regular hydrant is required.

Replacement of interior parts may be made without disturbing the connections, by unbolting the top cap and withdrawing the inside working parts.

Specify depth to set in ground, size and style of inlet, number and size of nozzles and gage of hose threads.

Nos. 2 and 2-A are usually furnished with inlet and outlet connections for wrought iron pipe, although the outlet may be threaded for any desired hose thread and the inlet for connection to cast iron pipe at a small additional cost.

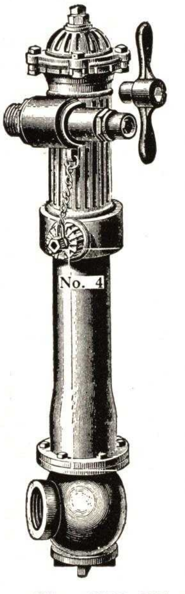
Approx. weights, No. 2-A, 1¼-in. complete, 5-ft. bury, 45 lb. Calculate 4 lb. per ft. plus or minus. No. 2-A, 1½-in. complete, 5-ft. bury, 60 lb. Calculate 5 lb. per foot plus or minus. No. 2, 2-in. complete, 5-ft. bury, 125 lb. Calculate 10 lb. per ft. plus or minus.

To Set in Ground Feet	Each No. 2-A 1¼-In.	 No. 2-A 1½-In.	 No. 2 2-In.	To Set in Ground Feet	Each No. 2-A 1¼-In.	 No. 2-A 1½-In.	 No. 2 2-In.
1½	$22.00	$30.47	$41.25	4	$23.65	$32.12	$44.00
2	22.55	30.80	41.80	5	24.20	32.78	45.10
3	23.10	31.46	42.90	6	24.75	33.44	46.20

1½-foot list applies to any shorter length.
For 2½ or 3-inch inlet, add $2.20 to list price.
For two 2-inch outlets, add $4.40 to list price.
For one 2½-inch outlet, add $1.90 to list price.
For two 2½-inch outlets, add $7.50 to list price.

No. 4 Eclipse Fire Hydrants

Non-Freezing



Designed for sprinkling or other work of a similar nature, since it is fitted with a secondary valve to overcome the necessity of draining the standpipe.

Bronze mounted, has rubber valve washer, and is equipped with automatic drain. Closes against pressure.

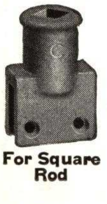
Interior parts may be replaced without disturbing the connections by unbolting the top cap and withdrawing the inside working parts.

Specify the length to set in ground, size and style of nozzles and inlet and gages of hose thread.

Length in Ground Feet	2-Inch Inlet and Outlet Each	2½ or 3-Inch Inlet and 2 or 2½-Inch Outlet Each
1½	$56.65	$69.30
2	57.20	70.40
3	58.30	72.60
4	59.40	74.80
5	60.50	77.00
6	61.60	79.20

Price of 1½-foot length applies on any shorter length. Prices include regular operating wrench.

No. 850 Malleable Iron Hydrant Clamps

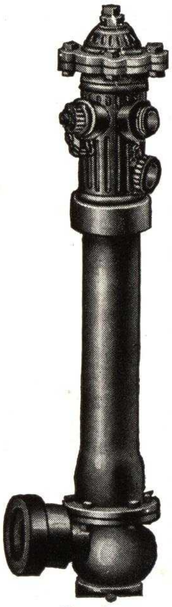


For Square Rod

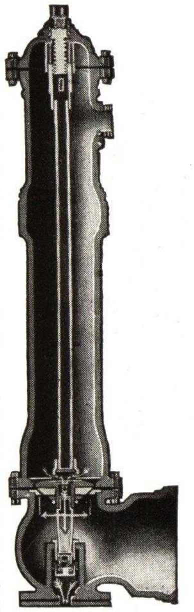
Size Opening of Rod or Pipe Inches	For Square Rod Black Each	 Width Slot In.	Tapped for Pipe Black Each	 Galv. Each	 Width Slot In.
⅜	$.06	$\frac{7}{16}$	$.09	$.12	½
½	.10	½	.13	.17	½

Eclipse Fire Hydrants

250 Pounds Working and Test Pressure



No. 3



Sectional View

Non-freezing, closes against pressure. Has positive automatic drain, rubber valve washer. Replacement of any worn-out part can be easily effected without disturbing connection to supply pipe. All inside parts easily withdrawn by unbolting and lifting the top cap.

Has bronze top screw for opening and closing hydrant. Up and down movement without torsional strain. Plunger complete with rubber seat washer, brass waste tube and cup leather check washers.

The No. 3 with a 4-inch valve opening and a 5-inch standpipe is the type most generally used by municipalities.

No. 6 with a 4¾-inch valve opening and a 6-inch standpipe and the No. 10 with a 5¼-inch valve opening and a 6½-inch standpipe, are correspondingly larger types and are designed for use where a streamer nozzle is required in addition to the regular sized nozzles furnished for connection to any style pipe.

A small extra charge is made for a flanged inlet, faced and drilled and also for a companion flange, if required.

Outlet connections for any specified hose thread.

All hydrants open to the left unless otherwise specified.

Frost cases are furnished only when specified.

Sample hose thread should accompany the order.

There will be a small extra charge for hydrants with nozzles equipped to take a Jones Patent Coupling.

Regular wrench furnished with each hydrant. Spanner or combination spanner wrenches at a small additional cost.

Approximate weights, No. 3, 5-foot bury, 4-inch inlet, 2 nozzles, 325 pounds. Calculate 25 pounds per foot plus or minus. No. 6, 5-foot bury, 4-inch inlet, 2 nozzles, 405 pounds. Calculate 35 pounds per foot plus or minus. No. 10, 5-foot bury, 6-inch inlet, 2 nozzles, 465 pounds. Calculate 45 pounds per foot plus or minus. For 6-inch inlet or steamer nozzle add 10 pounds.

No. 3

Diam. of Inlet Pipe Inches	Pavement to Center of Inlet Feet	One 2½-Inch Hose Nozzle Each	Two 2½-Inch Hose Nozzles Each	Three 2½-Inch Hose Nozzles Each	One Steamer Nozzle Each	One Steamer and One 2½-Inch Nozzle Each	One Steamer and Two 2½-Inch Nozzles Each	Frost Case for 5-Ft. Hydt. Each
3	5	$72.60	$77.00	$81.40	$79.20	$83.60	$88.00	$22.00
4	5	72.60	77.00	81.40	79.20	83.60	88.00	22.00
5	5	74.80	79.20	83.60	81.40	85.80	90.40	22.00
6	5	74.80	79.20	83.60	81.40	85.80	90.40	22.00

No. 6

Diam. of Inlet Pipe Inches	Pavement to Center of Inlet Feet	One 2½-Inch Hose Nozzle Each	Two 2½-Inch Hose Nozzles Each	Three 2½-Inch Hose Nozzles Each	One Steamer Nozzle Each	One Steamer and One 2½-Inch Nozzle Each	One Steamer and Two 2½-Inch Nozzles Each	Frost Case for 5-Ft. Hydt. Each
4	5	$82.00	$86.00	$90.00	$88.00	$92.00	$96.00	$25.00
6	5	82.00	86.00	90.00	88.00	92.00	96.00	25.00

No. 10

Diam. of Inlet Pipe Inches	Pavement to Center of Inlet Feet	One 2½-Inch Hose Nozzle Each	Two 2½-Inch Hose Nozzles Each	Three 2½-Inch Hose Nozzles Each	One Steamer Nozzle Each	One Steamer and One 2½-Inch Nozzle Each	One Steamer and Two 2½-Inch Nozzles Each	Frost Case for 5-Ft. Hydt. Each
6	5	$92.00	$96.00	$100.00	$98.00	$102.00	$106.00	$30.00

Extra length No. 3 stand-pipe, per foot $3.30; No. 6, $4.00 and No. 10, $5.00.

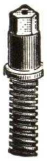
Extra length of frost case, No. 3, per foot, $2.00; No. 6, $4.00 and No. 10, $5.00.

1½-foot list applies to any shorter length.

Eclipse Fire Hydrant Replacement Parts

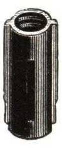
Closing against the Pressure

Bronze Top Screws



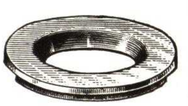
No.	Description	Each
500	For No. 2A, 1¼ or 1½-Inch Hydrant	**$3.00**
501	For No. 2 Hydrant	**3.85**
502	For No. 4 Hydrant	**3.85**
503	For No. 3 Hydrant	**6.00**
504	For Nos. 6 and 10 Hydrant	**6.00**

Bronze Top Connecting Nuts



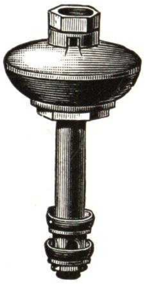
No.	Description	Each
510	For No. 2A, 1¼ or 1½-Inch Hydrant	**$3.00**
511	For No. 2 Hydrant	**3.85**
512	For No. 4 Hydrant	**3.85**
513	For No. 3 Hydrant	**6.00**
514	For No. 6 Hydrant	**6.00**
515	For No. 10 Hydrant	**6.00**

Bronze Seat Rings



No.	Description	Each
520	For No. 2A, 1¼ or 1½-Inch Hydrant	**$2.75**
521	For No. 2 Hydrant	**3.85**
522	For No. 4 Hydrant	**3.85**
523	For No. 3 Hydrant	**5.00**
524	For No. 6 Hydrant	**6.60**
525	For No. 10 Hydrant	**8.80**

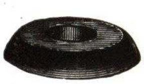
Plungers Complete



No.	Description	Each
530	For No. 2A, 1½ or 1½-Inch Hydrant	**$6.00**
531	For No. 2 Hydrant	**7.70**
532	For No. 4 Hydrant	**7.70**
533	For No. 3 Hydrant	**9.90**
534	For No. 6 Hydrant	**13.75**
535	For No. 10 Hydrant	**16.80**

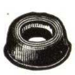
Any part of plunger can be supplied separately.

Rubber Seat Washers



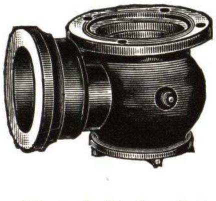
No.	Description	Each
540	For No. 2A, 1¼ or 1½-Inch Hydrant	**$.50**
541	For No. 2 Hydrant	**.55**
542	For No. 4 Hydrant	**.55**
543	For No. 3 Hydrant	**1.85**
544	For No. 6 Hydrant	**1.95**
545	For No. 10 Hydrant	**2.25**

Cup Washers—Two to Plunger



No.	Description	Each
560	For No. 2A, 1¼ or 1½-Inch Hydrant	**$.09**
561	For No. 2 Hydrant	**.06**
562	For No. 4 Hydrant	**.06**
563	For No. 3 Hydrant	**.12**
564	For No. 6 Hydrant	**.12**
565	For No. 10 Hydrant	**.12**

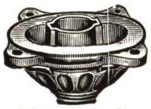
Iron Bottoms



No.	Each	Size Pipe Inches	Hydrant No.
569	**$10.45**	1¼	2A
570	**10.45**	1½	2A
571	**12.50**	2	2
571-A	**14.30**	2½	2
572	**14.30**	3	2
573	**18.70**	4	3
574	**20.90**	5	3
575	**20.90**	6	3
576	**26.40**	6	6
576-A	**26.40**	4	6
577	**33.00**	6	10

Furnished with gasket, bolts, and bronze waste tubes.

Iron Top Caps



No.	Description	Each
580	For No. 2A, 1¼ or 1½-Inch Hydrant	**$2.35**
581	For No. 2 Hydrant	**2.35**
582	For No. 4 Hydrant	**2.35**
583	For No. 3 Hydrant	**4.00**
584	For No. 6 Hydrant	**6.20**
585	For No. 10 Hydrant	**8.20**

Furnished with gaskets and bolts.

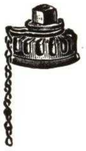
If bolts are not desired, deduct 30 cents from Nos. 580, 581, and 582 lists, 32 cents from No. 583 and 50 cents from Nos. 584 and 585. If gasket is not desired, deduct 12 cents from No. 580, 14 cents from Nos. 581 and 582, 16 cents from No. 583 and 22 cents from Nos. 584 and 585.

Eclipse Fire Hydrant Replacement Parts

Closing against the Pressure

Iron Nozzle Caps

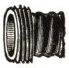
These caps are threaded to order. Furnished with chain and gasket.



Size No.	Description	Each
589	For 1¼-Inch Nozzle	**$.90**
590	For 1½-Inch Nozzle	**1.10**
591	For 2-Inch Nozzle	**1.10**
592	For 2½-Inch Nozzle	**2.20**
594	For 4½-Inch Nozzle	**2.30**

Bronze Nozzles

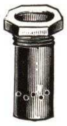
Nozzles are threaded to order.



No.	Description	Each
599	For 1¼-Inch Coupling	**$2.20**
600	For 1½-Inch Coupling	**2.20**
601	For 2-Inch Coupling	**2.50**
601-A	For 2½-Inch Coupling	**2.75**
602	For 2½-Inch Coupling	**3.30**
603	For 3½-Inch Coupling	**12.00**
604	For 4½-Inch Coupling	**12.00**

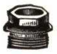
Bronze Waste Tubes

With Leather Gaskets



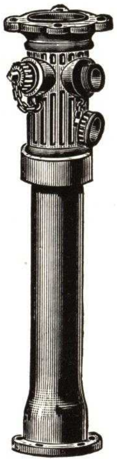
No.	Description	Each
610	For 2A, 1¼ or 1½-Inch Hydrant	**$2.50**
611	For No. 2 Hydrant	**2.50**
612	For No. 4 Hydrant	**2.50**
614	For No. 3 Hydrant	**3.00**
615	For No. 6 Hydrant	**3.00**
616	For No. 10 Hydrant	**3.00**

Bronze Top Bushings



No.	Description	Each
620	For No. 2A, 1¼ or 1½-Inch Hydrant	**$2.00**
621	For No. 2 Hydrant	**2.00**
622	For No. 4 Hydrant	**2.00**
624	For No. 3 Hydrant	**2.50**
625	For No. 6 Hydrant	**2.50**
626	For No. 10 Hydrant	**2.50**

Cast Iron Stocks



Complete with nozzles, caps, gaskets and bolts. Furnish sample of hose thread.

Specify depth of bury of hydrant on which stock is to be used, measuring from pavement line to center of inlet.

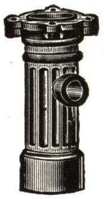
No. **480**, for No. 2 Hydrant, 4-Foot Bury, with One 2½-Inch Nozzle each	**$22.00**
For Two 2-Inch Nozzles, Add	**4.00**
For One 2½-Inch Nozzle, Add	**1.75**
For Two 2½-Inch Nozzles, Add	**7.50**

Description	One 2½" Nozzle Each	Two 2½" Nozzles Each
No. **481**, for No. 3 Fire Hydrant, 5-Foot, Bury	**$46.20**	**$50.60**
No. **483**, for No. 6 Hydrant, 5-Foot Bury	**49.50**	**53.60**
No. **484**, for No. 10 Fire Hydrant, 5-Foot Bury	On application	
For Steamer Nozzles, Add for No. **484**		**$10.00**
For 2½-Inch Nozzles, Add for No. **484**		**4.00**

Add or Deduct per Foot of Bury

For	480	481	483
Each	**$1.00**	**2.75**	**3.75**

Cast Iron Top Stocks

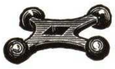


Complete with gaskets and bolts.

If nozzle and cap are required, specify and add at their proper price. Furnish sample of hose thread.

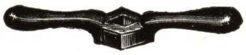
No. **486**, for No. 2A, 1¼ and 1½-Inch Fire Hydrant each	**$4.15**
No. **487**, for No. 2 Hydrant each	**6.00**
If Bolts are not Desired, Deduct	**.24**

Fire Hydrant Handles



No.	Description	Each
490	For No. 2A, 1¼-Inch Hydrant	**$.70**
491	For No. 2A, 1½-Inch Hydrant	**.70**

Fire Hydrant Wrenches



No.	Description	Each
492	For No. 2 Hydrant	**$1.10**
492A	For No. 4 Hydrant	**1.10**
493	For No. 3 Hydrant	**1.10**
496	For No. 6 Hydrant	**1.10**
497	For No. 10 Hydrant	**1.10**

No. E-5602 McDonald Stop Box Caps

Iron body brass screw.
Made in 1½-inch iron pipe size.

Water Meter Covers and Rings

WATER
METER

Price, Water Meter Covers and Rings ....per lb. ....

Round and Oval Meter Boxes

Can be furnished round and oval, with and without lock.
Price, Round and Oval Meter Boxes...........per lb. ....

Cast Iron Cistern Rings and Covers

Interlocking

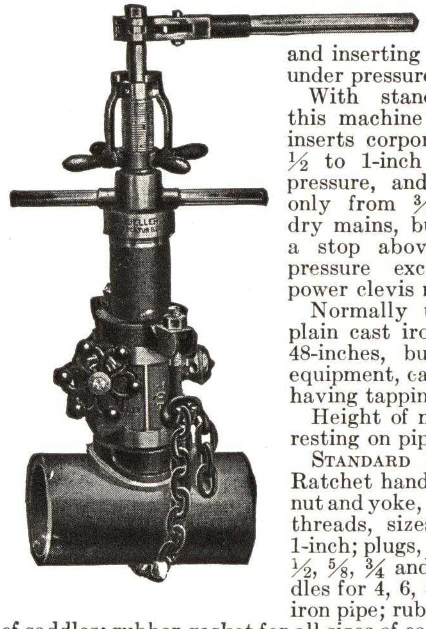
Size.......................inches	18	20	22	24
Each..............................	....	....	....	....
Diam. Across Top.........inches	23	26	28	30

Solid Cover Cast Iron Manhole Covers and Frames

Regularly supplied with solid cover. Perforated cover furnished at same price.

No.......................	1	2	3	4
Each.....................	....	....	....	.....
Diameter Cover....inches	22¼	23¾	30	21½
Height Frame......inches	8¾	7½	8¾	5
Diameter Bottom Flange...........inches	36	36	44	30
Diameter Opening.inches	20½	22	28	19½

Type B Mueller Water Tapping Machines



For tapping water mains, and inserting corporation stops under pressure.

With standard equipment, this machine makes taps and inserts corporation stops from ½ to 1-inch in mains under pressure, and will make taps only from ⅜ to 2-inches in dry mains, but will not insert a stop above 1-inch. When pressure exceeds 90 pounds power clevis must be used.

Normally used for tapping plain cast iron pipe from 4 to 48-inches, but with suitable equipment, can tap smaller pipe having tapping bosses.

Height of machine with tool resting on pipe, 24¼ inches.

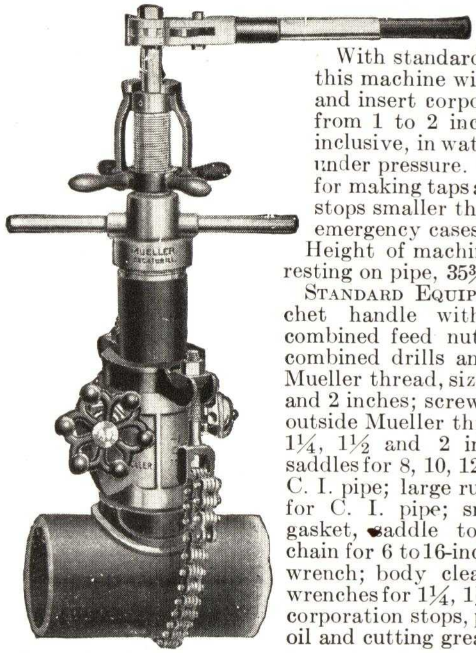
STANDARD EQUIPMENT.—Ratchet handle, combined feed nut and yoke, tools with Mueller threads, sizes, ½, ⅝, ¾ and 1-inch; plugs, male screw, sizes, ½, ⅝, ¾ and 1-inch; iron saddles for 4, 6, 8 and 10-inch cast iron pipe; rubber gasket for top of saddles; rubber gasket for all sizes of cast or wrought iron pipe; chain for pipe up to 12-inch; chain wrench and body cleaning chisel; oil and cutting grease.

Type B, in Strongly Constructed box.......each **$145.00**
Shipping weight.................................lbs. 120

Special iron-bound chest at an extra charge, if desired.

Optional equipment: Tools with I.P. Thread; 4 iron saddles for any size cast iron pipe; Inside, screw plugs with Mueller, Copper Pipe Connection, or I. P. Thread instead of Outside; without additional charge.

Type A-1 Mueller Water Tapping Machines



With standard equipment, this machine will make taps and insert corporation stops from 1 to 2 inches in size, inclusive, in water main pipe under pressure. Can be used for making taps and inserting stops smaller than 1 inch in emergency cases.

Height of machine with tool resting on pipe, 35¾ inches.

STANDARD EQUIPMENT.—Ratchet handle with extension; combined feed nut and yoke; combined drills and taps with Mueller thread, sizes 1, 1¼, 1½ and 2 inches; screw plugs with outside Mueller thread, sizes 1, 1¼, 1½ and 2 inches; iron saddles for 8, 10, 12 and 16-inch C. I. pipe; large rubber gasket for C. I. pipe; small rubber gasket, saddle top; flat link chain for 6 to 16-inch pipe; chain wrench; body cleaning chisel; wrenches for 1¼, 1½ and 2-inch corporation stops, power clevis, oil and cutting grease.

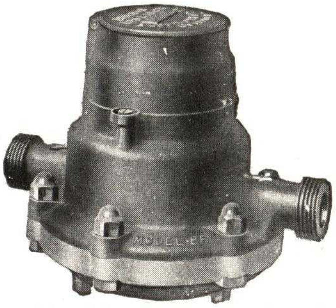
Approximate shipping weight, 250 pounds.

Type A-1, in Wooden Compartment Chest....each **$222.50**

OPTIONAL EQUIPMENT.—Combined drills and taps with iron pipe thread without additional charge; 4 iron saddles of any size up to 48 inches furnished without charge upon specification, in place of 8, 10, 12 and 16-inch saddles; inside thread screw plugs instead of outside thread screw plugs.

Prices upon application.

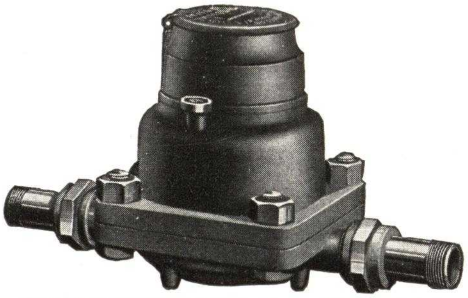
Niagara and American Water Meters



American Frost Bottom Type Meter, ⅝-Inch Size

Niagara or American Water Meters are first quality, full size, fully guaranteed meters of positive displacement disc type as universally used by waterworks. They measure with unusual accuracy at all rates of flow permitting waterworks to earn full revenue and profits for water sold or industries to obtain accurate process control and cost records.

The Niagara Meter has the outer casing made of cast iron hot zinc coated and is especially recommended for hard alkaline or corrosive water. The American Meter has the main casing made of cast bronze. Both brands contain the same works and are of equal quality.



Niagara Solid Casing Type Meter, ⅝-Inch Size With Couplings

In sizes ⅝ to 1 inch the American and Niagara Meters are made with or without breakable cast iron frost bottom. The frost bottom prevents damage to more expensive parts should the meter freeze. Breaking action is pre-tested at the factory to insure dependability in service.

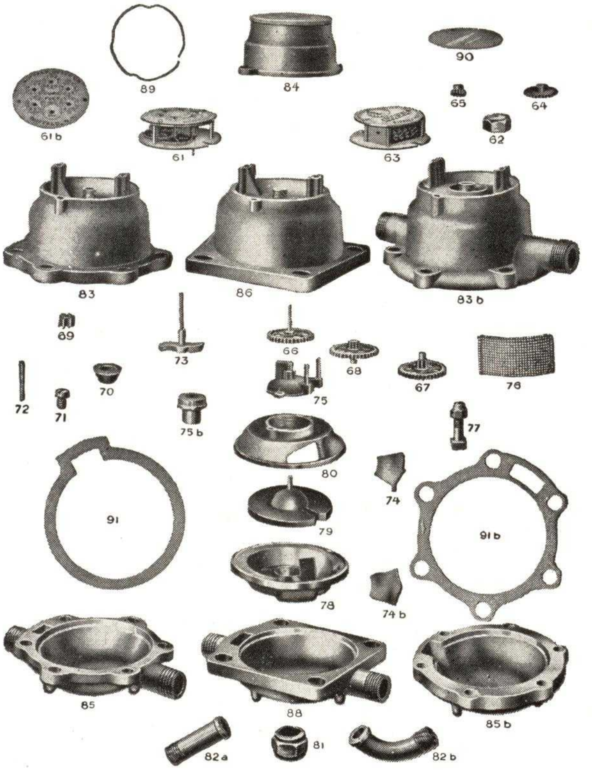
Meters are regularly furnished with external threads for brass union meter couplings. American Meters in sizes 1¼, 1½, and 2 inches may also be furnished with internal pipe threads without extra charge. Gear trains are patented chromium-shell water-lubricated type. Oil-enclosed type available in all meters up to 2 inches.

All meters comply with the Standard Specifications of the American Water Works Association covering capacity, interior construction, dimensions, and guarantee.

Size Inches	Greatest Proper Capacity U.S.Gal. per Min.	Niagara		American		
		Solid Casing or Frost Bottom Each	**Couplings** Extra per Pair	**Solid Casing** Each	**Frost Bottom** Each	**Couplings** Extra per Pair
⅝x½	20	‡$16.00	$1.00	‡$20.00	‡$18.00	$1.00
⅝x¾	20	‡16.00	1.50	‡20.00	‡18.00	1.50
¾	30	‡24.00	1.50	‡30.00	‡27.00	1.50
1	50	‡35.00	2.20	‡44.00	‡39.60	2.20
1¼	75	†‡48.00	3.00	‡60.00	......	No
1½	100	†‡64.00	4.00	‡80.00	......	Extra
2	160	†‡96.00	6.00	‡120.00	......	Charge
2½	225	†160.00	No	200.00	......	No
3	300	†200.00	Extra	240.00	......	Extra
*3	360	†240.00	Charge	......	......	Charge
*4	500	†360.00	for	400.00	......	for
*6	1000	†720.00	Flanges	800.00	......	Flanges

*Heavy duty type.
†Made in solid casing type only.
‡Oil enclosed gear train, $1.00 extra, except no charge in American solid casing type ⅝x½ or ⅝x¾ inch sizes.

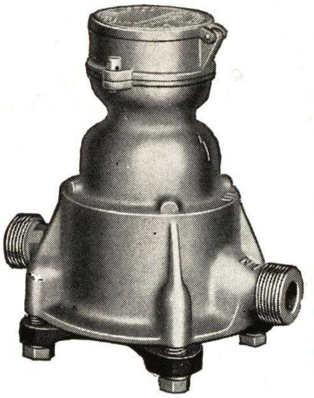
Repairs for Niagara and American Flat Disc Water Meters



Part No.	Description	Each — Model Letter B	C	DV	EV	FV	GV
		Diameter of Meter Opening, Inches ⅝	¾	1	1¼	1½	2
61	Round Reading Register...	$3.50	$3.50	$4.50	$4.50	$4.50	$4.50
61B	Register Dial Only........	.50	.50	.70	.70	.70	.70
62	Stuffing Box Nut.........	.20	.20	.20	.20	.20	.20
63	Straight Reading Register..	5.00	5.00	6.00	6.00	6.00	6.00
64	Register Change Gear.....	.25	.25	.25	.25	.25	.25
65	Meter Change Gear.......	.25	.25	.25	.25	.25	.25
65A	Idler Change Gear........	....	....	.50	.50	.50	.50
66	Top Intermediate Train Gear	.50	.50	.80	.80	.80	.80
67	First Intermed, Train Gear.	.80	.80	1.20	1.20	1.20	1.20
68	Second Intermed, Train Gear	.80	.80	1.20	1.20	1.20	1.20
69	Intermediate Pinion......	.15	.15	.70	.70	.70	.70
70	Roller..................	.25	.25	.60	.60	.60	.65
71D	Brass Screw for Cap......	.03	.03	.10	.10	.10	.10
71F	For Measuring Chamber...	.03	.03	.03	.03	.03	.10
72	Intermediate Gear Pivot...	.06	.06	.10	.10	.10	.10
73	Pinion Driver...........	.25	.25	1.25	1.25	1.25	1.30
74-74B	Diaphragm.............	.25	.40	.60	.90	1.20	2.25
75	Intermediate Gear Plate...	1.90	1.90	2.80	2.80	2.80	3.40
76	Strainer...............	.40	.60	.90	1.05	1.20	1.60
77A	Flange Bolt with Iron Nut.	.10	.10	.15	.15	.15	.15
77B	Flange Bolt with Brass Nut	.15	.15	.25	.25	.25	.25
78	Disc Chamber Bottom.....	3.25	5.40	8.10	11.40	15.20	25.25
79	Disc Piston, Re-inforced...	2.00	3.50	5.50	8.25	11.50	18.00
80	Disc Chamber Top........	3.00	5.00	7.50	10.50	14.00	23.00
81	Coupling Nut...........	.20	.30	.44	.60	.80	1.20
82A	Coupling Spigot..........	.30	.45	.66	.90	1.20	1.80
83	Bronze Top Casing.......	5.00	9.00	13.00	18.00	26.00	42.00
83B	Brz. Top Cas., Frost Type.	7.00	12.00	18.00	.....	.....	.....
83C	Gal. C. I. Top, Frost Type..	3.00	7.00	11.00	.....	.....	.....
84	Bronze Register Box......	1.50	1.50	2.00	2.00	2.00	2.00
84B	Galv. Iron Register Box....	1.10	1.10	1.60	1.60	1.60	1.60
85	Bronze Bottom Casing....	5.50	9.00	13.00	18.00	26.00	42.00
85E	Galv. Iron Bot. Amer.......	1.80	4.00	6.50	9.00	13.00	21.00
85B	Galv. Frost Bottom........	.70	1.90	2.90	.....	.....	.....
86	Galv. Iron Top Casing.....	2.40	4.00	6.50	9.00	13.00	21.00
88	Galv. Iron Bot. Niagara....	1.80	4.00	6.50	9.00	13.00	21.00
90	Register Box Glass........	.10	.10	.10	.10	.10	.10
91-91B	Casing Gasket...........	.04	.12	.20	.30	.40	.60
92	Coupling Washers........	.02	.02	.08	.12	.16	.24
62A	Stuff. Box Washers. per 100	.90	.90	.90	.90	.90	.90

Badger Disc Type Water Meters

Type SOT



Badger disc meters have large capacity and are especially sensitive and accurate on small streams and on all streams, up to maximum capacity.

Model A

Model A is of 4-gear intermediate train design assembled as a unit with the housing. Intermediate gears operate in a special non-congealing graphite oil, insuring gear protection from corrosive action of water. Breakable bottom insures protection from freezing.

Size Inches	Each	Connections Each	Length Inches	Safe Operating Cap., Gal. per Min.	Net Weight Pounds
5/8	$20.00	$1.00	7½	26	11
¾x 5/8	20.00	1.50	7½	26	11½
¾	30.00	1.50	9	40	13
1	44.00	2.20	10¾	65	22
1¼	60.00	3.00	11½	82	26

Model SC

A companion model and type to Model A 4-gear design, with intermediate gears operating in a special non-congealing graphite oil. Provision is made in construction of this model to meet conditions where there is no danger of freezing.

Size Inches	Each	Connections Each	Length Inches	Safe Operating Cap., Gal. per Min.	Net Weight Pounds
5/8	$20.00	$1.00	7½	26	11
¾x 5/8	20.00	1.50	7½	26	11½
¾	30.00	1.50	9	40	13
1	44.00	2.20	10¾	65	22
1¼	60.00	3.00	11½	82	26

Model SC

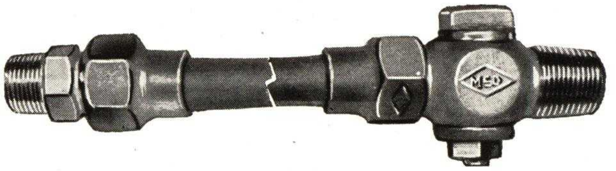
This meter is a continuation of the Models A and SC with gear train operating in oil. Because meters of this size are generally used on heavy services, the gear trains are constructed on an oversize scale and are known as heavy duty trains. Sizes 1½ and 2-inch furnished with female spuds or flange connections, 3, 4, and 6-inch sizes with flange connections only.

Size Inches	Each	Connections Each	Length Inches	Safe Operating Cap., Gal. per Min.	Net Weight Pounds
1½	$80.00	$4.00	12⅝	130	31
2	120.00	6.00	15¼	160	53
3	240.00	*	24	350	135
4	400.00	*	29	550	249
6	800.00	*	36½	1050	575

No extra charge for standard flange connections.

McDonald Copper Pipe Goosenecks

No. E-4780



Made up of a corporation stop with Mueller thread on inlet and Mueller copper service pipe thread on outlet, a piece of copper service pipe, and copper service pipe straight coupling with male thread. Coupling can be furnished with female outlet and corporation stop with iron pipe thread on inlet will be furnished if specified.

Size, Inches	½	⅝	¾	1	1¼	1½	2
Lgth. of Copper Pipe	18	18	18	18	24	30	36

No. E-4780A

Same as No. E-4780 except with ⅛ bend coupling.

No. E-4780B

Same as No. E-4780 except with ¼ bend coupling.

No. E-4780C

Same as No. E-4780 except corporation stop and coupling have iron pipe thread outlet one size larger than body and fitted with ⅛ bend coupling with copper gasket.

No. E-4780D

Same as No. E-4780 except corporation stop outlet and coupling inlet threaded for Mueller machine and fitted with ⅛ bend coupling with copper gasket.

No. E-4780E

Same as No. E-4780 except corporation stop and coupling have iron pipe thread outlet one size larger than body and fitted with ¼ bend coupling with copper gasket.

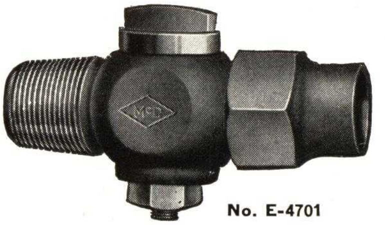
No. E-4780F

Same as No. E-4780 except corporation stop outlet and coupling inlet threaded for Mueller machine and fitted with ¼ bend coupling with copper gasket.

McDonald Brass Corporation Stops

For Copper Service Pipe

Mueller Thread Inlet



No. E-4701

Outlet is Mueller service pipe thread for copper tubing, same size as stop, except ⅝-inch which is for ¾-inch copper tubing.

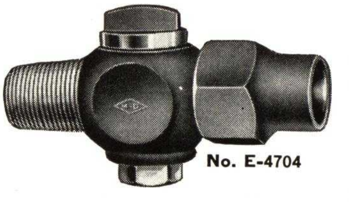
Requires an inside threaded screw plug for insertion by tapping machine.

No. E-4701, with coupling nut.
No. E-4701A, with **E-4750** ⅛ bend coupling and gasket.
No. E-4701B, with **E-4776** ¼ bend coupling and gasket.
No. E-4701C, without coupling nut.
Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Brass Corporation Stops

For Copper Service Pipe

Iron Pipe Thread Inlet



No. E-4704

Outlet is Mueller service pipe thread for copper tubing, same size as stop, except ⅝-inch which is for ¾-inch iron pipe and ¾-inch copper tubing.

Requires an inside threaded screw plug for insertion by tapping machine.

No. E-4704, with coupling nut.
No. E-4704A, with **E-4750** ⅛ bend coupling and gasket.
No. E-4704B, with **E-4776** ¼ bend coupling and gasket.
No. E-4704C, without coupling nut.
Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Copper Service Pipe and Iron Pipe
Round Way—Inverted Key—Patent Cap
Galvanized Malleable Tee Handles

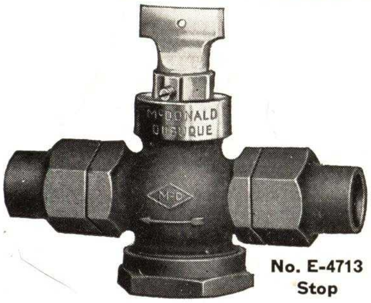
No. E-4711 Stop

No. E-4711 Stops
No. E-4712 Stops and Drains

With inlet end copper pipe coupling, outlet end inside iron pipe thread. Sizes: ½, ¾, 1, 1¼, 1½ and 2 inches.

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Copper Service Pipe
Round Way—Inverted Key—Patent Cap
Galvanized Malleable Tee Handles



No. E-4713 Stop

No. E-4713 Stops

No. E-4714 Stops and Drains

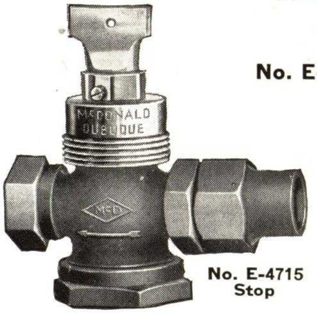
With copper pipe couplings at both ends.

Sizes: ½, ¾, 1, 1¼, 1½ and 2 inches.

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Copper Service Pipe and Iron Pipe
Round Way—Inverted Key—Patent Cap
Galvanized Malleable Tee Handles

Minneapolis Pattern
No. E-4715 Stops
No. E-4716 Stops and Drains



No. E-4715 Stop

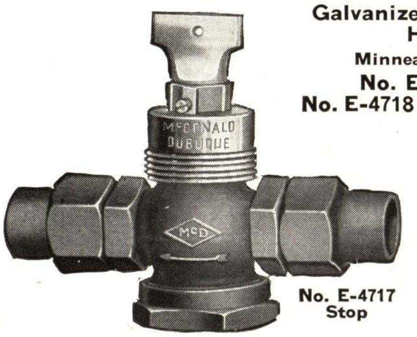
Inlet end copper pipe coupling; outlet end inside iron pipe thread.

Size In.	Size Minneapolis Top I.P.T. In.	Size In.	Size Minneapolis Top I.P.T. In.
½	1½	1¼	2½
¾	1½	1½	3
1	2	2	4

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Copper Service Pipe and Iron Pipe
Round Way—Inverted Key—Patent Cap
Galvanized Malleable Tee Handles

Minneapolis Pattern
No. E-4717 Stops
No. E-4718 Stops and Drains



No. E-4717 Stop

Size Inches	Size Minneapolis Top I.P.T. Inches
½	1½
¾	1½
1	2
1¼	2½
1½	3
2	4

McDonald Brass Couplings

For Corporation Stops

No. E-4750

No. E-4776

For use on corporation stops with outlets that are Mueller service pipe thread for copper tubing same size as stop.

No. E-4750, ⅛ bend.

No. E-4776, ¼ bend.

For ½, ⅝, ¾, 1, 1¼, 1½, and 2-inch size corporation stops.

McDonald Brass Curb Stops and Curb Stops and Drains

For Copper Service Pipe and Iron Pipe
Round Way
Solid Brass Tee Handles

No. E-4721 Stop

No. E-4721 Stops

No. E-4722 Stops and Drains

Inlet end copper pipe coupling; outlet end inside iron pipe thread.

Sizes: ½, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Brass Curb Stops and Curb Stops and Drains

For Copper Service Pipe
Round Way
Solid Brass Tee Handles

No. E-4723 Stop

No. E-4723 Stops

No. E-4724 Stops and Drains

Both ends copper pipe couplings.

Sizes: ½, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Brass Curb Stops and Curb Stops and Drains

For Copper Service Pipe and Iron Pipe
Round Way
Solid Brass Tee Handles

Minneapolis Pattern
No. E-4725 Stops
No. E-4726 Stops and Drains

No. E-4725 Stop

Inlet end copper pipe coupling; outlet end inside iron pipe thread.

Size In.	Size Minneapolis Top I.P.T. In.	Size In.	Size Minneapolis Top I.P.T. In.
½	1¼	1¼	2½
¾	1½	1½	3
1	2	2	3½

McDonald Copper Service Pipe Connections

For Corporation Stops

With Gasket

Straight

No. E-4741 and
No. E-4742

No. E-4741. Inlet end has iron pipe thread, one size larger than size stated. (⅝-inch has ¾-inch pipe thread.) Outlet for copper service pipe of size stated, except ⅝-inch which is for ¾-inch service pipe.

No. E-4742. Inlet end has Mueller corporation stop thread of size stated. Outlet for copper service pipe of size stated except ⅝-inch which is for ¾-inch service pipe.

No. E-4742-LF. Inlet end has lead flange thread, same as on lead flange corporation stops. Outlet for copper service pipe of size stated, except ⅝-inch which is for ¾-inch service pipe.

Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

⅛ Bend

Nos. E-4747 to E-4750

No. E-4747. Inlet end has iron pipe thread of size stated. Outlet end for copper service pipe of size stated. No gasket.

No. E-4748. Inlet end has iron pipe thread one size larger than size stated. ⅝-inch has ¾-inch iron pipe thread. Outlet end for copper service pipe of size stated, except ⅝-inch which is for ¾-inch service pipe.

No. E-4749. Inlet end has Mueller corporation stop thread of size stated. Outlet end for copper service pipe of size stated, except ⅝-inch which is for ¾-inch service pipe.

No. E-4749-LF. Inlet end screws on lead flange end of corporation stop. Outlet for copper pipe of size stated, except ⅝-inch, which is for ¾-inch service pipe.

No. E-4750. Inlet end screws on outlet end of corporation stops with Mueller service pipe thread for copper tubing. Outlet for copper service pipe of size stated, except ⅝-inch which is for ¾-inch service pipe. Furnished with copper asbestos gasket.

Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches except No. E-4747 which is not available in ⅝-inch size.

¼ Bend

No. E-4776. Inlet end screws on outlet end of corporation stops with Mueller service pipe thread for copper tubing. Outlet end for copper service pipe of size stated, except ⅝-inch which is for ¾-inch copper service pipe. Furnished with copper asbestos gasket.

Nos. E-4776 to E-4779

No. E-4777. Inlet end has Mueller corporation thread and screws on outlet end of corporation stops threaded to fit Mueller machine. Outlet end for copper service pipe of size stated, except ⅝-inch which is for ¾-inch copper service pipe.

No. E-4778. Inlet end has iron pipe thread one size larger than size listed, and screws on end of corporation stops. Outlet end for copper service pipe of size stated, except ⅝-inch which is for ¾-inch copper service pipe.

No. E-4779. Inlet end has iron pipe thread, same size as listed. Outlet end for copper pipe of size stated. No gasket.

Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches except No. E-4779 which is not available in ⅝-inch size.

McDonald Copper Service Pipe Couplings

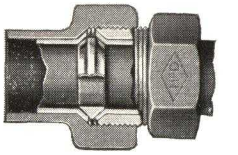
No. E4753

With male iron pipe thread at one end, and for copper service pipe of size stated at other end.
Sizes: ½, ¾, 1, 1¼, 1½ and 2 inches.

No. E4754

With female iron pipe thread at one end, and for copper service pipe of size stated at other end.
Sizes: ½, ¾, 1, 1¼, 1½ and 2 inches.

No. E4756



For copper service pipe at both ends. Made with a double taper cone, between the stud and coupling nut as shown.
Sizes: ½, ¾, 1, 1¼, 1½ and 2 inches.

No. E-4775-N McDonald Brass Flanging Tools

Used for flanging the ends of copper tubing in making connections. This should be oiled or greased before inserting into the copper service pipe.
Sizes: ½, ¾, 1, 1¼, 1½, and 2 inches.

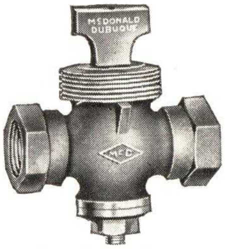
No. E-3204 McDonald Brass Swedging Tools

McDONALD-DUBUQUE

Used for making lead flange connections. Rough finish.
Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Brass Curb Stops and Curb Stops and Drains

For Iron Pipe
Round Way



No. E-2991 Stop

Solid Brass Tee Handles
Minneapolis Pattern

No. E-2991 Stops
No. E-2992 Stops and Drains

Size.....in.	½	⅝	¾	1	1¼	1½	2
Size Minneapolis Top........in.	1¼	1½	1½	2	2½	3	3½

Another McDonald Catalog

Ask for your copy of the complete catalog of Waterworks Brass Goods.

Red Metal Rough Ground Key Work

Stops **Stop and Drains**

Tee Handle Flat Way For Iron Pipe

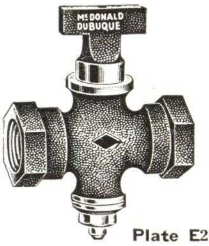

McDONALD DUBUQUE

Plate E2891

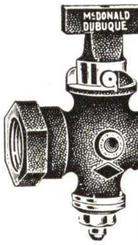

McDONALD DUBUQUE

Plate E2892

Size In.	Each	Size In.	Each	Size In.	Each	Size In.	Each
¼	$1.65	1¼	$7.45	¼	$1.70	1¼	$7.60
⅜	1.70	1½	12.45	⅜	1.75	1½	12.70
½	1.75	2	21.50	½	1.80	2	22.00
⅝	2.45	2½	34.00	⅝	2.50	2½	35.00
¾	3.00	3	45.00	¾	3.05	3	46.50
1	4.40	...	.....	1	4.50	...	.....

Lever Handle—Flat Way—For Iron Pipe

Stops **Stop and Drains**

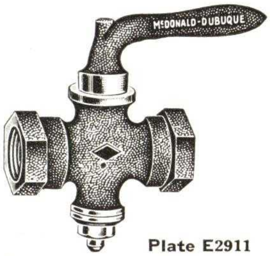

McDONALD-DUBUQUE

Plate E2911

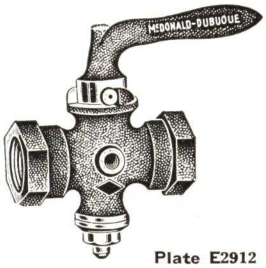

McDONALD-DUBUQUE

Plate E2912

Size In.	Each	Size In.	Each	Size In.	Each	Size In.	Each
¼	$1.65	1	$4.40	¼	$1.70	1	$4.50
⅜	1.70	1¼	7.45	⅜	1.75	1¼	7.60
½	1.75	1½	12.45	½	1.80	1½	12.70
⅝	2.45	2	21.50	⅝	2.50	2	22.00
¾	3.00	...	.....	¾	3.05	...	.....

Stops **Stop and Drains**

Tee Handle Round Way For Iron Pipe

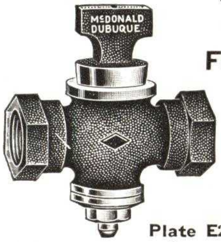

McDONALD DUBUQUE

Plate E2931

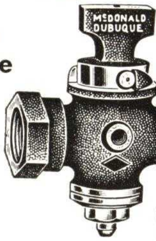

McDONALD DUBUQUE

Plate E2932

Size In.	Each	Size In.	Each	Size In.	Each	Size In.	Each
½	$2.20	1¼	$10.05	½	$2.25	1¼	$10.20
⅝	3.00	1½	16.45	⅝	3.05	1½	16.70
¾	3.85	2	28.50	¾	3.90	2	29.00
1	6.15	...	.....	1	6.25	...	.....

Lever Handle—Round Way—For Iron Pipe

Stop **Stop and Drains**

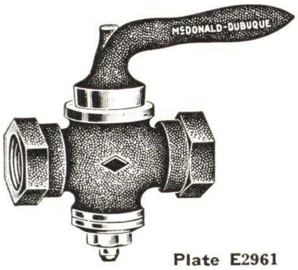

McDONALD-DUBUQUE

Plate E2961

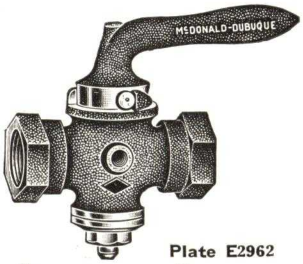
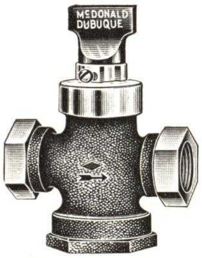

McDONALD-DUBUQUE

Plate E2962

Size In.	Each	Size In.	Each	Size In.	Each	Size In.	Each
½	$2.20	1¼	$10.05	½	$2.25	1¼	$10.20
⅝	3.00	1½	16.45	⅝	3.05	1½	16.70
¾	3.85	2	28.50	¾	3.90	2	29.00
1	6.15	...	.....	1	6.25	...	.....

Diamond Patent Cap Inverted Key Curb Stops and Stop and Drains

High Pressure—Round Way—Red Metal—Malleable Tee Handle—Regular Pattern—Iron Pipe


McDONALD DUBUQUE

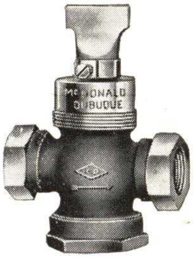
No. E3061, Stops

Size Inches	No. E3061 Stops Each	No. E3062 Stop and Drains Each
½	$2.95	$3.00
⅝	3.80	3.85
¾	4.90	4.95
1	7.40	7.50
1¼	12.05	12.20
1½	19.45	19.70
2	33.00	33.50

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Iron Pipe

Round Way—Inverted Key—Patent Cap


McDONALD DUBUQUE

No. E-3081 Stop

Malleable Galvanized Tee Handles

Minneapolis Pattern

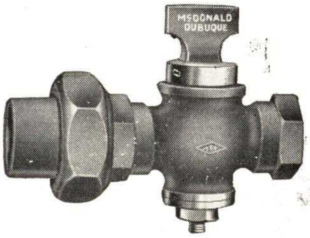
No. E-3081 Stops

No. E-3082 Stops and Drains

Size........in.	½	⅝	¾	1	1¼	1½	2
Size Minneapolis Top ....in.	1½	1½	1½	2	2½	3	4

McDonald Brass Curb Stops and Stops and Drains

Round Way—Tee Handles
No. E2951 Stops
No. E2952 Stops and Drains

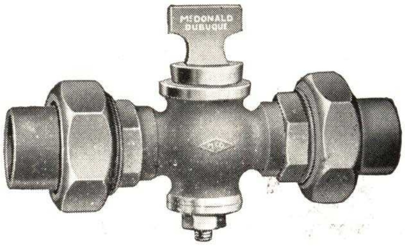

McDONALD DUBUQUE

No. E2951 Stop

With lead flange one end, iron pipe thread other end. Sizes: ½, ⅝, ¾ and 1 inch.

McDonald Brass Curb Stops and Stops and Drains

Round Way—Tee Handles
No. E2953 Stops
No. E2954 Stops and Drains


McDONALD DUBUQUE

No. E2953 Stop

With lead flange both ends, Sizes ½, ⅝, ¾ and 1 inch.

McDonald Brass Curb Stops and Curb Stops and Drains

For Lead Flange and Iron Pipe
Round Way Solid Brass Tee Handles
Minneapolis Pattern

McDONALD
DUBUQUE

No. E-3021 Stop

No. E-3021 Stops
No. E-3022 Stops and Drains

With lead flange one end, iron pipe thread other end.

Size.....in.	½	⅝	¾	1
Size Minneapolis Top ....in.	1¼	1½	1½	2

McDonald Brass Curb Stops and Curb Stops and Drains

For Lead Flange Round Way
Solid Brass Tee Handles
Minneapolis Pattern

McDONALD
DUBUQUE

No. E-3023 Stop

No. E-3023 Stops
No. E-3024 Stops and Drains

With lead flange both ends.

Size Inches	Size Minneapolis Top Inches
½	1¼
⅝	1½
¾	1½
1	2

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Lead Flange and Iron Pipe
Round Way—Inverted Key—Patent Cap
Galvanized Malleable Tee Handles

A.Y.McDONALD MFG
DUBUQUE IOWA

No. E-3072 Stop and Drain

No. E-3071 Stops

No. E-3072 Stops and Drains

With lead flange one end, iron pipe thread other end.

Sizes: ½, ⅝, ¾, and 1-inch.

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Lead Flange
Round Way—Inverted Key—Patent Cap
Galvanized Malleable Tee Handles

A.Y.McDONALD MFG
DUBUQUE IOWA

No. E-3073 Stop

No. E-3073 Stops

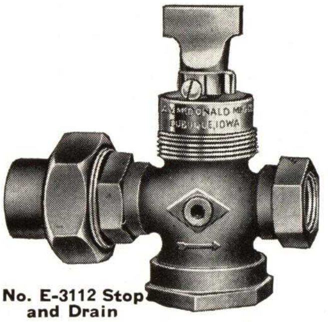
No. E-3074 Stops and Drains

With lead flange both ends.

Sizes: ½, ⅝, ¾, and 1-inch.

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Lead Flange and Iron Pipe
Round Way—Inverted Key—Patent Cap
Galvanized Malleable Tee Handles
Minneapolis Pattern



No. E-3112 Stop and Drain

No. E-3111 Stops
No. E-3112 Stops and Drains

With lead flange one end, iron pipe thread other end.

Size Inches	Size Minneapolis Top Inches
½	1½
⅝	1½
¾	2
1	2½

McDonald Diamond Brass Curb Stops and Curb Stops and Drains

For Lead Flange
Round Way—Inverted Key—Patent Cap
Galvanized Malleable Tee Handle
Minneapolis Pattern

A.Y.McDONALD MFG
DUBUQUE IOWA

No. E-3113 Stop

No. E-3113 Stops
No. E-3114 Stops and Drains

With lead flange both ends.

Size Inches	Size Minneapolis Top Inches
½	1½
⅝	1½
¾	2
1	2½

Solid Head Hydrant Stop

Ground Key—Red Metal—For Iron Pipe

McDONALD
DUBUQUE

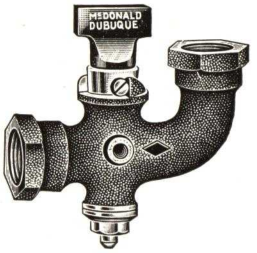
Plate E3041

Size.................inches	½	⅝	¾	1	1¼
E3041.................each	$2.15	3.05	3.75	5.40	8.65

No. E-3044 McDonald Brass Hydrant Stops

For Iron Pipe

Flat Way—Socket Head—Tee Handle



Sizes: ½, ⅝, ¾, and 1-inch.

Diamond Patent Cap Hydrant Stops

Ground Key—Red Metal—Malleable Tee Handle

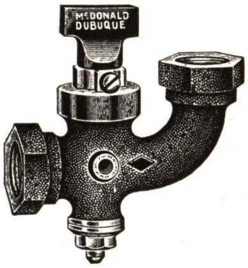


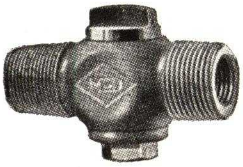
Plate E3045

Size.................inches	½	⅝	¾	1	1¼
E3045.................each	**$2.15**	**3.05**	**3.75**	**5.40**	**8.65**

McDonald Brass Corporation Stops

Without Coupling

For Mueller Machine



No. E-3121

Inlet end threaded to fit Mueller machine. Outlet end threaded iron pipe, next size larger than body.

No. E-3121½

Both ends threaded iron pipe, outlet next size larger than body. The ⅝-inch size is threaded for ¾-inch iron pipe.

No. E-3131

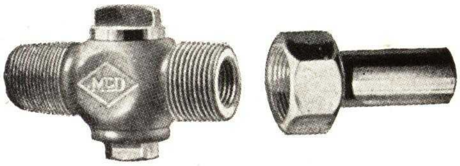
Inlet and outlet threaded iron pipe, same size as body. Outlet not tapped for screw plug.

Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Brass Corporation Stops

With Straight Union Coupling

For Mueller Machine



No. E-3122

Inlet end threaded to fit Mueller machine. Outlet end threaded to fit Mueller machine.

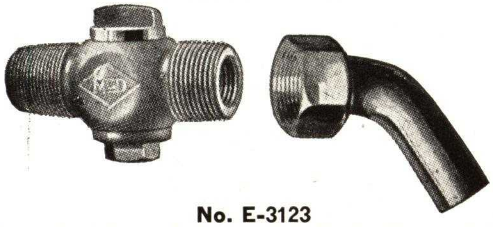
No. E-3132

Inlet end threaded iron pipe, same size as body. Outlet end threaded to fit Mueller machine.
Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Brass Corporation Stops

*With ⅛ Bend Union Coupling

For Mueller Machine



No. E-3123

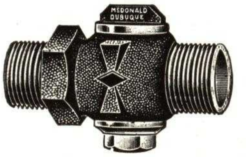
Inlet and outlet end threaded to fit Mueller machine.

No. E-3133

Inlet threaded iron pipe, same size as body. Outlet end threaded to fit Mueller machine.
Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.
*Can be furnished with ¼ bend coupling when specified.

McDonald Brass Corporation Stops

For Service Clamps with Drilling Machine



No. E-3152

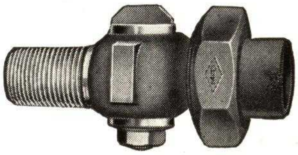
Without coupling. Hexagon on inlet end. Inlet and outlet threaded iron pipe same size as body. The ⅝-inch size is threaded for ¾-inch iron pipe.

No. E-3153

With ⅛ bend coupling. Inlet end threaded iron pipe, same size as body. Outlet end threaded iron pipe, next size larger than body. Hexagon on inlet end.
Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Brass Corporation Stops

With Lead Flange Union Coupling



No. E-3171

For Mueller machine. Inlet end threaded to fit Mueller machine.

No. E-3172

Inlet end threaded iron pipe, same size as body.
Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

McDonald Extra Heavy Lead Goose Necks

Hand Wiped Joints

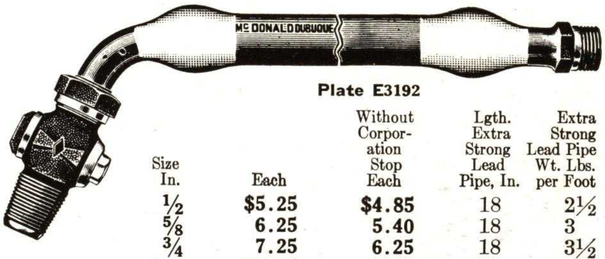
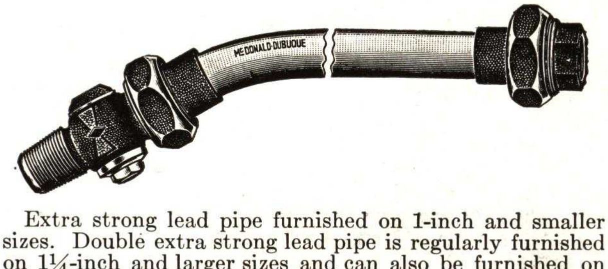


Plate E3192

Size In.	Each	Without Corporation Stop Each	Lgth. Extra Strong Lead Pipe, In.	Extra Strong Lead Pipe Wt. Lbs. per Foot
½	**$5.25**	**$4.85**	18	2½
⅝	**6.25**	**5.40**	18	3
¾	**7.25**	**6.25**	18	3½
1	**10.75**	**9.20**	18	4¾
1¼	**19.50**	**16.20**	24	6
1½	**31.00**	**25.50**	30	7½
2	**48.50**	**38.50**	36	9

No. E-3201 McDonald Lead Goosenecks

Lead Flanged Joint

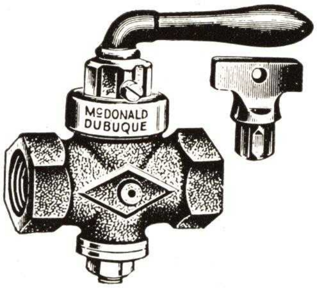


Extra strong lead pipe furnished on 1-inch and smaller sizes. Double extra strong lead pipe is regularly furnished on 1¼-inch and larger sizes and can also be furnished on smaller sizes.

Size......................inches	½	⅝	¾	1	1¼	1½	2
Length of Lead Pipe.......in.	18	18	18	18	24	30	36
Wt. of Lead Pipe....lb. per ft.	2½	3	3½	4¾	6¾	9	10⅞

McDonald Diamond Brass Stops and Stops and Drains

Flat Way—High Pressure—Patent Cap



No. E-2832 Stop and Drain

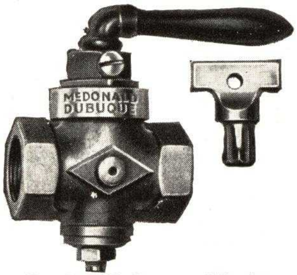
Malleable Tee or Lever Handles Right or Left
No. E-2831 Stops

No. E-2832 Stops and Drains

Sizes: ½, ⅝, ¾, 1, and 1¼ inches.

McDonald Southern Brass Stops and Stops and Drains

Flat Way—High Pressure—Patent Cap



No. E-2842 Stop and Drain

Malleable Tee or Lever Handles Right or Left

No. E-2841 Stops
No. E-2842 Stops and Drains

Sizes: ½, ⅝, and 1-inch.

Lead Flange Union Couplings

Red Metal
Lead and Inside Thread

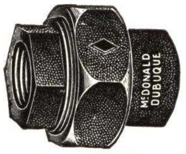


Plate E3202

Size Inches	Price Each	Size Inches	Price Each
½	$.85	1¼	$3.80
⅝	1.30	1½	5.00
¾	1.50	2	7.50
1	2.00	...	....

Lead Flange Union Couplings

Red Metal
Lead Pipe Both Ends

Size Inches	Price Each	Size Inches	Price Each
½	$1.75	1¼	$7.50
⅝	2.50	1½	9.25
¾	2.95	2	14.25
1	3.90	...	......

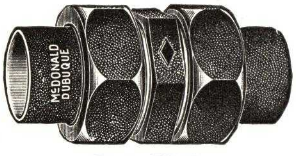
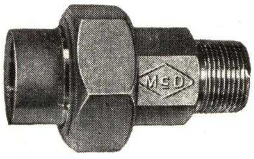


Plate E3203

No. E-3207 McDonald Lead Flange Union Couplings

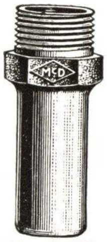


Lead to Male Iron Pipe Thread

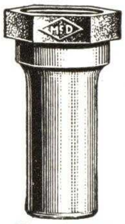
Sizes: ½, ⅝, ¾, 1, 1¼, 1½, and 2 inches.

Soldering Nipples

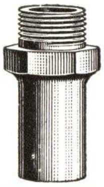
Diamond **Standard**



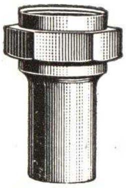
No. E4321 Male



No. E4322 Female



No. E4324 Male



No. E4325 Female

Diamond

Diamond soldering nipples are made of red metal, extra heavy and extra long.

Size In.	Male Length In.	Male Wt., Ozs. per Doz.	Female Length In.	Female Wt., Ozs. per Doz.	Per Dozen
⅜	2¹¹⁄₁₆	28	2½	30	.....
½	2¹⁵⁄₁₆	40	2¾	48	.....
¾	3¹⁄₁₆	56	2¾	58	.....
1	3⁵⁄₁₆	82	3⅛	90	.....
1¼	3½	132	3⁷⁄₁₆	165	.....
1½	3½	152	3½	224	.....
2	3⅞	210	3½	252	.....

Standard

Size In.	Male Length In.	Male Wt., Ozs. per Doz.	Female Length In.	Female Wt., Ozs. per Doz.	Per Dozen
⅜	2¼	19	2	21	.....
½	2½	30	2½	35	.....
¾	2¾	41	2⁵⁄₁₆	52	.....
1	3	73	2¹¹⁄₁₆	75	.....
1¼	3¼	93	3	93	.....
1½	3⅜	140	3¼	140	.....
2	3⅝	177	3½	177	.....

Soldering Unions

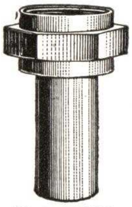


Plate E4323
Diamond

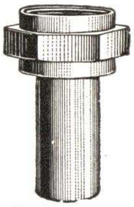


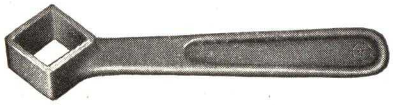
Plate E4326
Standard

Diamond soldering unions are made of red metal, extra heavy and extra long.

Size In.	Price per Doz.	Size In.	Price per Doz.	Size In.	Price per Doz.	Size In.	Price per Doz.
⅜	$4.80	¾	$7.80	1¼	$13.20	2	$21.00
½	6.00	1	10.20	1½	15.00	.	.....

No. 7904 Malleable Iron Cock Wrenches

For Gas and Steam Cocks

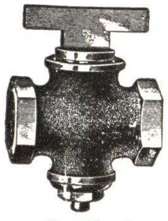


No.	Each	Size Square Opening Inches	No.	Each	Size Square Opening Inches	No.	Each	Size Square Opening Inches
2	$.06	⅜	5½	$.17	¾	8½	$.48	1³⁄₁₆
3	.07	⁷⁄₁₆	6	.19	¾	9	.56	1¼
3½	.08	½	6½	.23	⅞	10	.56	1½
4	.09	⁹⁄₁₆	7	.25	1	11	1.00	1¾
4½	.12	⅝	7½	.40	1¹⁄₁₆	12	1.00	2
5	.14	¹¹⁄₁₆	8	.44	1⅛	....	....	...

Brass Steam Cocks

For 125 Pounds Steam Working Pressure

These are full weight, standard steam cocks, made of high grade steam brass, carefully finished and perfectly ground. Carefully tested.

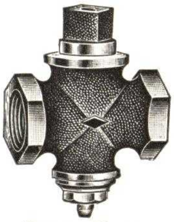


Tee Head
Plate E9701

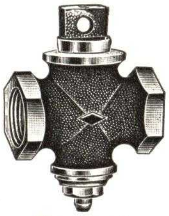
Tee Head

Size Inches	Price, Each Without Check	With Check
¼	$.85	$1.00
⅜	1.00	1.15
½	1.25	1.40

Square or Flat Head



Square Head
Plate E9702

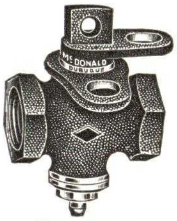


Flat Head
Plate E9703

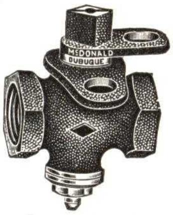
Size Inches	Price, Each Without Check	With Check
¼	$.85	$1.00
⅜	1.00	1.15
½	1.25	1.40
¾	1.70	1.90
1	2.35	2.55

Size Inches	Price, Each Without Check	With Check
1¼	$3.70	$3.95
1½	4.85	5.15
2	7.30	7.65
2½	14.50	15.00
3	22.50	23.25

McDonald Lock Wing Gas Service Stops



Flat Head
Plate E10621



Square Head
Plate E10622

Size In.	Standard Each
⅜	$1.75
½	1.85
¾	2.10
1	2.70

Size In.	Standard Each
1¼	$3.85
1½	5.90
2	9.55
. . .	. . . .

McDonald Gas Stops

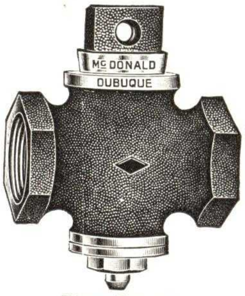
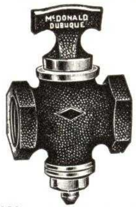


Plate E10681

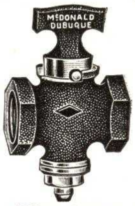
This stop is made extra heavy and is a high grade article for high pressure service. Weight, 56 ounces.

Price, 1¼-inch.................................each $5.25

McDonald Tee Head Gas Service Stops



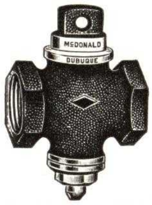
Without Check
Plate E10591



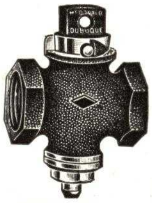
With Check
Plate E10592

Size In.	Without Check Standard Each	Extra Heavy Each	With Check Standard Each	Size In.	Without Check Standard Each	Extra Heavy Each	With Check Standard Each
¼	$1.35	$1.50	$1.60	1	$2.30	$2.80	$2.75
⅜	1.45	1.60	1.70	1¼	3.25	4.05	3.90
½	1.55	1.70	1.80	1½	5.15	6.30	5.90
¾	1.80	2.15	2.10	2	8.55	9.75	9.30

McDonald Flat Head Gas Service Stops



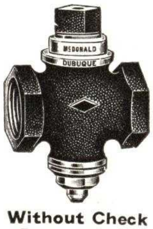
Without Check
Plate E10595



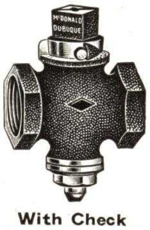
With Check
Plate E10596

Size Inches	Without Check Standard Each	Extra Heavy Each	With Check Standard Each
¼	$1.35	$1.50	$1.60
⅜	1.45	1.60	1.70
½	1.55	1.70	1.80
¾	1.80	2.15	2.10
1	2.30	2.80	2.75
1¼	3.25	4.05	3.90
1½	5.15	6.30	5.90
2	8.55	9.75	9.30
2½	18.75	22.00	19.85
3	28.90	32.50	30.30

McDonald Square Head Gas Service Stops

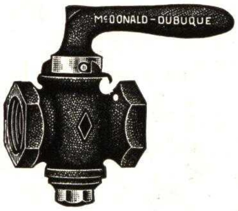


Without Check
Plate E10603



With Check
Plate E10604

Size Inches	Without Check Standard Each	Extra Heavy Each	With Check Standard Each
¼	$1.35	$1.50	$1.60
⅜	1.45	1.60	1.70
½	1.55	1.70	1.80
¾	1.80	2.15	2.10
1	2.30	2.80	2.75
1¼	3.25	4.05	3.90
1½	5.15	6.30	5.90
2	8.55	9.75	9.30
2½	18.75	22.00	19.85
3	28.90	32.50	30.30



McDonald Gas Service Stops

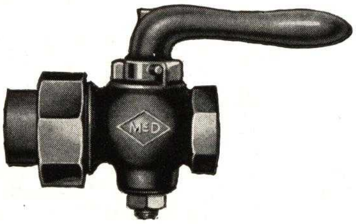
No. E-10598, Solid Brass Lever Handle with Check
No. E-10598-LC, Solid Brass Lever Handle less Check

Furnished in the following sizes: ¼, ⅜, ½, ¾, 1, and 1¼ inches.

McDonald Brass Gas Service Stops

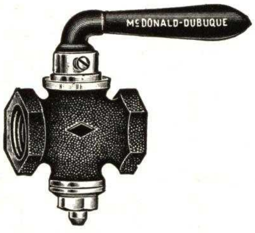
Flat Way

Solid Brass Lever Handles

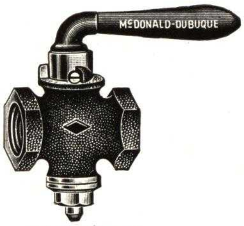


No. E-10599, with check and ground joint union.
No. E-10599-LC, without check, with ground joint union.
Sizes: ½, and ¾-inch.

McDonald Socket Head Malleable Handle Gas and Service Stops



Without Check
Plate E10611



With Check
Plate E10612

Size.......................inches	⅜	½	¾	1
Price, without Check Std....each	**$1.75**	**$1.85**	**$2.10**	**$2.65**
Price, with Check Std.......each	2.00	2.10	2.40	3.10

McDonald Angle Pattern Gas Stove Stops

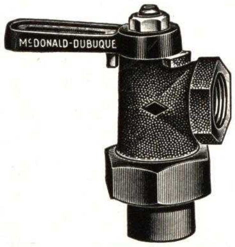
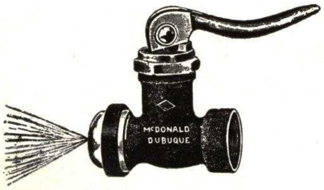


Plate E10682

This has an inverted plug, which will not stick and has an adjustable malleable handle. Union coupling is malleable with a leather washer. Oval way outlet in plug. This stove stop is desirable where space is limited, as it saves room and fittings, and is a first class article in every way.

Size................................inches	½	¾	1
Price...............................each	**$2.00**	2.15	5.25

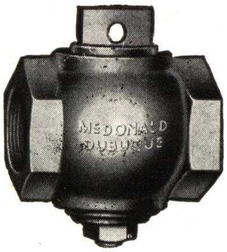
No. 872 McDonald Brass Self-Closing Auto Wash Valves



With ¾-inch hose thread.
Rough nickel plated.

No. E-10685 McDonald Gas Service Stops

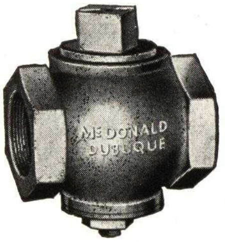
Heavy Pattern—Flat Way—Flat Head



Iron body with bronze plug, nut and washer. Black or galvanized.
Sizes: ½, ¾, 1, 1¼, 1½, and 2 inches.

No. E-10686 McDonald Gas Service Stops

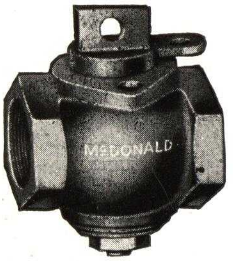
Heavy Pattern—Flat Way—Square Head



Iron body with bronze plug, nut and washer. Black or galvanized.
Sizes: ½, ¾, 1, 1¼, 1½, and 2 inches.

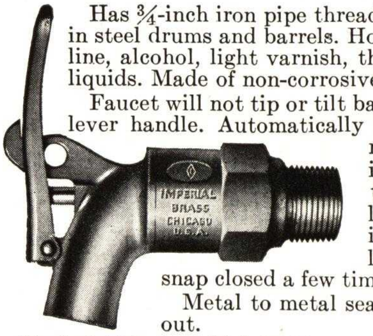
No. E-10687 McDonald Gas Service Stops

Heavy Pattern—Flat Way—Flat Head Lock Wing



Iron body with bronze plug, nut and washer. Black or galvanized.
Sizes: ½, ¾, 1, 1¼, 1½, and 2 inches.

No. 261-G Imperial Self-Closing Barrel Faucets



Has ¾-inch iron pipe thread. Fits a 1-inch opening in steel drums and barrels. Holds oil, kerosene, gasoline, alcohol, light varnish, thinners and most other liquids. Made of non-corrosive material.

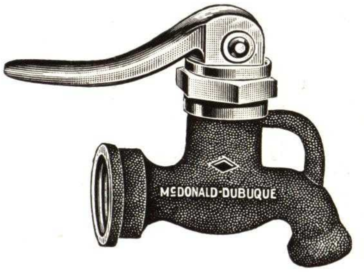
Faucet will not tip or tilt barrel. Opens by pushing lever handle. Automatically closes when handle is released. Easily locked in open or closed position. Should grit collect on metal seat causing leakage, pressing lever open and letting snap closed a few times will reseat faucet.

Metal to metal seat. No washers to wear out.

Packed 12 in box. Weight 12 ounces each.

No. 261-G..each **$1.35**

No. 880 McDonald Radiator Fill Faucets



This self-closing faucet insures against water puddles at garages and filling stations.

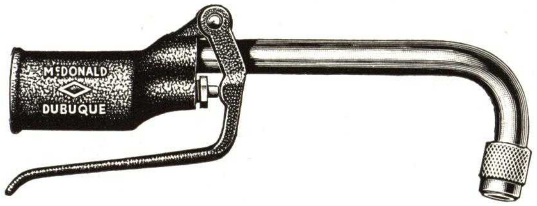
Flow of water stops immediately when the handle is released—there is positively no leakage.

This faucet is designed especially to withstand much abuse. It has a special loop for hanging when not in use.

Size, ¾ inch.

Weight each, 1½ pounds.

No. 950 McDonald Radiator Fill Faucets



A self-closing faucet with rough nickel-plated body, long spout, and anti-splash. No after drip.

Size, ¾ inch.

Available chromium plated when specified.

Weight, 1 pound.

McDonald Oil Faucets

For Steel Oil Barrels and Drums

McDonald Oil Faucets are made from a good grade of **Brass,** carefully machined and perfectly ground. They are made for use with gasoline or other liquid petroleum products; fitted to withstand the action of such oils without leakage. All are **Guaranteed** unreservedly.

Lock Lever Plain Oil Faucets for Iron Pipe

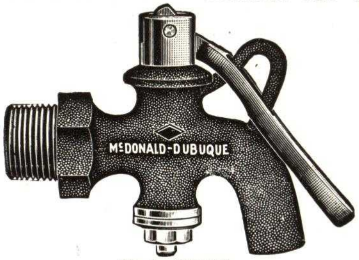


Plate E11001

Size.......inches	½	⅝	¾	1	1¼	1½
Price, Rough..ea.	$.76	.79	.88	1.39	3.00	3.51

Lock Lever Hose Oil Faucets for Iron Pipe

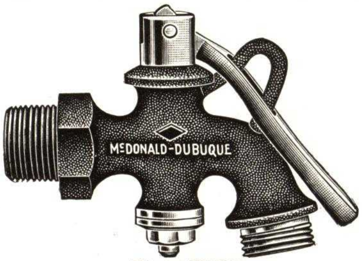
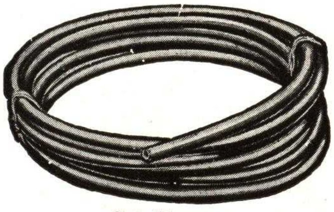


Plate E11002

Size.......inches	½	⅝	¾	1	1¼	1½
Price, Rough..ea.	$.85	.90	1.00	1.70	3.68	4.31

Copper Water Tube



Soft Temper

Hard Temper

Type K is furnished in both hard and soft tempers and is used for underground services, for general plumbing purposes with severe conditions. Hard temper, 400 pounds working pressure, steam (saturated) up to 65 pounds gauge or 310°F. Soft temper, 250 pounds working pressure, steam (saturated) up to 65 pounds gauge or 310°F. Furnished in hard or soft in straight 20-foot lengths; soft in 30, 45 and 60-foot coils. Coiling over 1¼-inch size not recommended.

Type L is also made in hard and soft tempers and is used for general plumbing purposes. Hard temper, 250 pounds working pressure, steam (saturated) up to 65 pounds gauge or 310°F. Soft temper, 150 pounds working pressure, steam (saturated) up to 65 pounds gauge or 310°F. Furnished in hard or soft in straight 20-foot lengths; soft in 30, 45 and 60-foot coils. Coiling over 1¼-inch size not recommended.

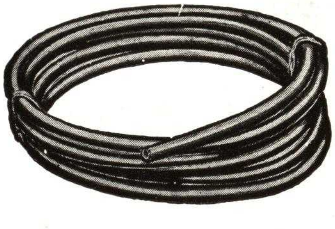
Type M is furnished in hard temper only, 250 pounds working pressure, and is used for general plumbing and heating purposes with soldered fittings only and with normal water conditions. Furnished in straight 20-foot lengths.

		Type K			Type L			Type M		
Nom. Size In.	O.D. In.	Per Foot	Thickness Wall In.	Wt. Lb. per Ft.	Per Foot	Thickness Wall In.	Wt. Lb. per Ft.	Per Foot	Thickness Wall In.	Wt. Lb. per Ft.
⅜	½	...	.049	.269	...	.035	.198	...	...	...
½	⅝	...	.049	.344	...	.040	.285	...	...	...
*⅝	¾	...	.049	.418	...	.042	.362	...	...	...
¾	⅞	...	.065	.641	...	.045	.455	...	...	...
1	1⅛	...	.065	.839	...	.050	.655	...	...	...
1¼	1⅜	...	.065	1.04	...	.055	.884	...	...	...
1½	1⅝	...	.072	1.36	...	.060	1.14	...	...	...
2	2⅛	...	.083	2.06	...	.070	1.75	...	...	...
2½	2⅝	...	.095	2.93	...	.080	2.48	...	.065	2.03
3	3⅛	...	.109	4.00	...	.090	3.33	...	.072	2.68
3½	3⅝	...	.120	5.12	...	.100	4.29	...	.083	3.58
4	4⅛	...	.134	6.51	...	.110	5.38	...	.095	4.66
5	5⅛	...	.160	9.67	...	.125	7.61	...	.109	6.66
6	6⅛	...	.192	13.90	...	.140	10.20	...	.122	8.92
†8	8⅛	...	.271	25.90	...	.200	19.30	...	.170	16.50
†10	10⅛	...	.338	40.30	...	.250	30.10	...	.212	25.60
†12	12⅛	...	.405	57.80	...	.280	40.40	...	.254	36.70

*Hard temper only.
†Hard temper only in Type L.

Annealed Copper Tubing in Coils

For hot and cold water, air, etc., up to 250 pounds pressure. On steam (saturated) up to 80 pounds gauge, or 325°F.

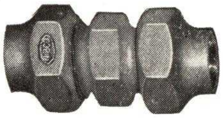


Outside Diam. In.	Stubs' Gage No.	Wt. Lb. per Linear Foot
⅛	20	.0384
3/16	20	.0650
¼	20	.0916
5/16	20	.118
⅜	18	.195
½	16	.344
⅝	16	.443
¾	16	.542

Prices upon application.

Series 500 Nibco Flared Copper Fittings

Approved by Underwriters' Laboratories


No. 501 Coupling Copper to Copper 3 Part

No. 502 Coupling Copper to Copper With Gland Ring

No. 503 Adapter Copper to Female

No. 504 Adapter Copper to Male

No. 506 45° Elbow Copper to Copper

No. 506-3 45° Elbow Copper to Female

No. 506-4 45° Elbow Copper to Male

No. 507 90° Elbow Copper to Copper

No. 507-3 90° Elbow Copper to Female

No. 507-3-5 Drop Ear Fitting

No. 507-4 90° Elbow Copper to Male

No. 511 Tee, Copper to Copper to Copper

No. 518 Flanging Tool

No. 524 Copper Pipe Strap

No. 520 Range Boiler Coupling

No. 521 Range Boiler Elbow

No. 512 Tee Outlet Female

No.	Description	Size, Inches								
		⅛ Each	¼ Each	⅜ Each	½ Each	¾ Each	1 Each	1¼ Each	1½ Each	2 Each
500	Tube Nut	$.11	$.12	$.12	$.15	$.20	$.40	$.60	$.90	$1.50
500–3	Nut with F. Pipe Thrd.	.15	.17	.23	.30	.40	.60	1.05	1.50	2.80
500–4	Nut with M. Pipe Thrd.	.15	.17	.23	.30	.40	.60	1.05	1.50	2.80
501	Coupling, C-C	.40	.45	.50	.60	1.00	1.50	2.45	3.80	6.10
502	Coupling with Ring	.28	.32	.35	.45	.60	1.15	1.80	2.65	4.10
503	Adapter, C-F	.28	.32	.35	.45	.60	1.15	1.80	2.65	4.10
504	Adapter, C-M	.28	.32	.35	.45	.60	1.15	1.80	2.65	4.10
506	45° Elbow, C-C	.40	.45	.50	.60	1.00	1.50	2.45	3.80	6.10
506–3	45° Elbow, C-F	.40	.45	.50	.60	1.00	1.50	2.45	3.80	6.10
506–4	45° Elbow, C-M	.40	.45	.50	.60	1.00	1.50	2.45	3.80	6.10
507	90° Elbow, C-C	.40	.45	.50	.60	1.00	1.50	2.45	3.80	6.10
507–3	90° Elbow, C-F	.40	.45	.50	.60	1.00	1.50	2.45	3.80	6.10
507–4	90° Elbow, C-M	.40	.45	.50	.60	1.00	1.50	2.45	3.80	6.10
507–3–5	90° El. C-F Drop Ear	...	...	.75	1.00	1.50	2.65	....	....	....
507–5	90° El. C-C Drop Ear	...	...	.75	1.00	1.50	2.65	....	....	....
511	Tee, C-C-C	.60	.70	.70	1.00	1.35	2.45	4.20	6.40	9.90
512	Tee, C-C-F	.60	.70	.70	1.00	1.35	2.45	4.20	6.40	9.90
513	Tee, C-C-M	.60	.70	.70	1.00	1.35	2.45	4.20	6.40	9.90
514	Tee, C-F-C	.60	.70	.70	1.00	1.35	2.45	4.20	6.40	9.90
515	Tee, C-M-C	.60	.70	.70	1.00	1.35	2.45	4.20	6.40	9.90
511–5	Tee, Drop Ear, C-C-C	...	...	1.20	1.50	2.35	3.95	....	....	....
512–5	Tee, Drop Ear, C-C-F	...	...	1.20	1.50	2.35	3.95	....	....	....
516	Fitting Cap	.21	.24	.27	.30	.50	.75	1.50	2.05	3.80
517	Tube End Plug	.21	.24	.27	.30	.50	.75	1.50	2.05	3.80
518	Flanging Tool	.45	.45	.55	.65	.80	1.30	3.60	5.00	6.40
519	Terminal Fitting	...	...	.60	.70	1.00	1.75	2.75	3.80	5.45
520	Range Boiler Coupling	...	...	...	.70	.70	....	....	....	....
521	Range Boiler Elbow	...	...	...	1.05	1.05	....	....	....	....
523	Fitting Reducer	...	...	.50	.55	.70	1.20	2.15	3.05	4.10
524	Cop. Pipe Strap..per 1000	30.10	33.40	42.60	47.10	65.40	77.50	120.10	139.80	176.30
529	Oil Tank Fitting	....	.55	.70	1.05	....	....	....	....	....
530	Bulkhead Fitting	....	.55	.70	1.05	1.80	3.05	4.55	7.90	10.25
535	Cross, C-C-C-C	....	....	1.20	1.50	2.35	4.05	6.60	10.25	15.75
537	Wash Tray T C-C-F	....	....	....	1.90	....	....	....	....	....

Regularly furnished in nominal sizes. Can also be furnished for O.D. pipe sizes.

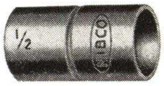
No. 513 Tee Outlet Male

No. 514 Tee Run Female

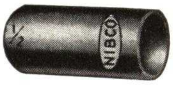
No. 515 Tee Run Male

No. 511 Reducing Tee

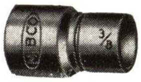
Series 600 Nibco Wrought Solder Fittings



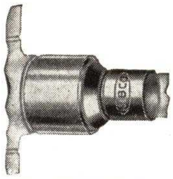
No. 600 Couplings with Stop
Copper to Copper
Sizes, ⅛ to 4
Inches Incl.



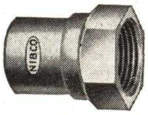
No. 601 Couplings without Stop
Copper to Copper
Sizes, ⅛ to 4
Inches Incl.



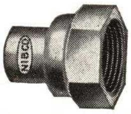
No. 600-R Reducing Couplings
Copper to Copper
Sizes, ¼x⅛ to
4x3 Inches Incl.



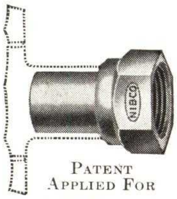
No. 600-2 Fitting Reducers
Fitting to Copper
Sizes, ¼x⅛ to
4x3 Inches Incl.



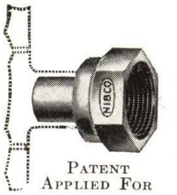
Patent Applied For
No. 603 Female Adapters
Copper to Female
S.P.S.
Sizes, ⅛ to 3
Inches Incl.



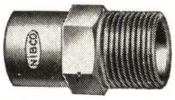
Patent Applied For
No. 603-R Reducing Female Adapters
Copper to Female
S.P.S.
Sizes, ⅛x¼ to
2x1½ Inches Incl.



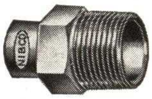
Patent Applied For
No. 603-2 Female Fitting Adapters
Fitting to Female
S.P.S.
Sizes, ¼ to 2
Inches Incl.



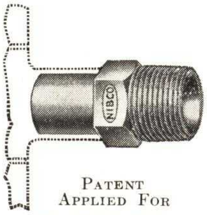
Patent Applied For
No. 603-2-R Reducing Female Fitting Adapters
Fitting to Female
S.P.S.
Sizes, ⅜x½ to
1x1¼ Inches Incl.



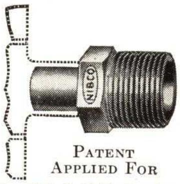
Patent Applied For
No. 604 Male Adapters
Copper to Male
S.P.S.
Sizes, ⅛ to 3
Inches Incl.



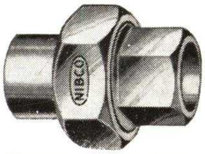
Patent Applied For
No. 604-R Reducing Male Adapters
Copper to Male S.P.S.
Sizes, ⅛x¼ to
2x1½ Inches Incl.



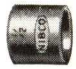
Patent Applied For
No. 604-2 Male Fitting Adapters
Copper to Male S.P.S.
Sizes, ¼ to 2
Inches Incl.



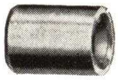
Patent Applied For
No. 604-2-R Reducing Male Fitting Adapters
Fitting to Male S.P.S.
Sizes, ⅜x½ to
1¼x1½ Inches Incl.



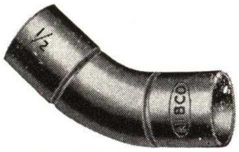
Patent Applied For
No. 633 Unions
Copper to Copper
Sizes, ⅛ to 2
Inches Incl.



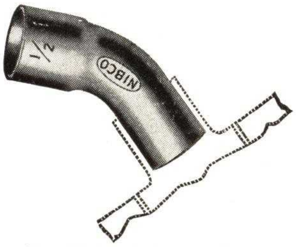
No. 617 Tube Caps
Sizes, ⅛ to 4
Inches Incl.



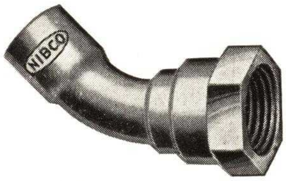
No. 618 Flush Bushings
Fitting to Copper
Sizes, ¼x⅛ to
1½x1¼ Inches Incl.



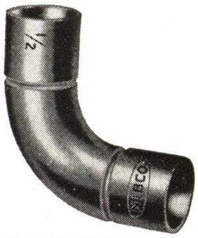
No. 606 45° Elbows
Copper to Copper
Sizes, ⅛ to 4 Inches Incl.
No. 606-2-2 45° Street Elbows
Fitting to Fitting
Sizes, ¼ to 1 Inch Incl.



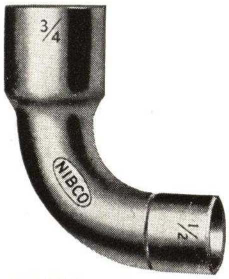
No. 606-2 45° Street Elbows
Copper to Fitting
Sizes, ⅜ to 2 Inches Incl.



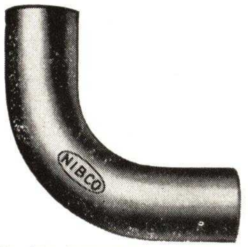
***No. 606-3 45° Elbows**
Copper to Female S.P.S.
Sizes, ⅜ to 1 Inch Incl.
***No. 606-4 45° Elbows**
Copper to Male S.P.S.
Sizes, ⅜ to 1 Inch Incl.



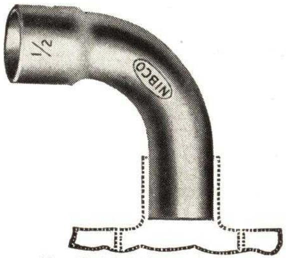
No. 607 90° Elbows
Copper to Copper
Sizes, ⅛ to 4 Inches Incl.



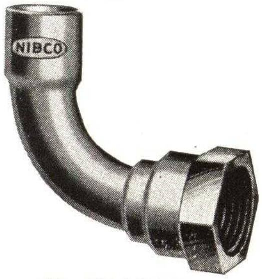
No. 607-R Reducing 90° Elbows
Copper to Copper
Sizes, ⅜x¼ to 2x1½ Inches Incl.



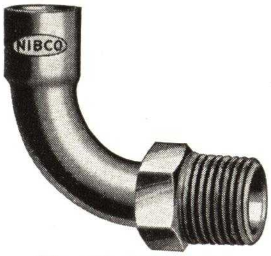
No. 607-2-2 90° Street Elbows
Fitting to Fitting
Sizes ⅛ to 4 Inches Incl.



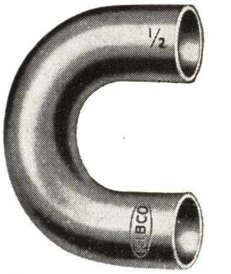
No. 607-2 90° Street Elbows
Copper to Fitting
Sizes, ¼ to 4 Inches Incl.



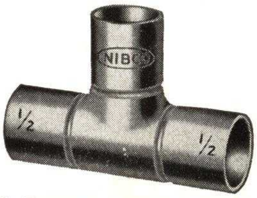
***No. 607-3 90° Elbows**
Copper to Female S.P.S.
Sizes, ⅜ to 1 Inch Incl.
***No. 607-3-R Reducing 90° Elbows**
Copper to Female S.P.S.
Sizes, ⅜x½ to 1x¾ Inch Incl.



***No. 607-4 90° Elbows**
Copper to Male S.P.S.
Sizes, ⅜ to 1 Inch Incl.
***No. 607-4-R Reducing 90° Elbows**
Copper to Male S.P.S.
Sizes, ⅜x½ to 1x¾ Inch Incl.



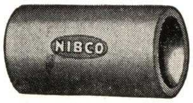
No. 638 Return Bends
Copper to Copper
Sizes, ⅛ to 2 Inches Incl.



U. S. Patents 2,027,285 - 2,111,695
No. 611 Tees
Copper to Copper to Copper
Sizes, ⅛ to 4
Inches Incl.
No. 611-R Reducing Tees
Copper to Copper to Copper
Sizes, ¼ to 2½ Inches in
All Regular Reducing Sizes.

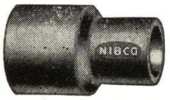
*Fabricated from two parts and silver soldered.

Series 700 Nibco Cast Solder Fittings



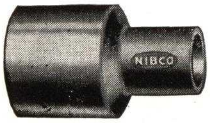
No. 701 Coupling

Copper to Copper
Sizes, ¼ to 8
Inches Incl.



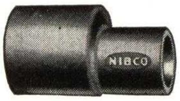
No. 701-R Reducing Couplings

Copper to Copper
Sizes, ¾x½ to 8x6
Inches Incl.



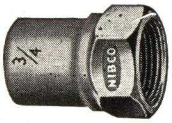
No. 701-2 Fitting Reducers

Fitting to Copper
Sizes, ⅜x¼ to 4x3
Inches Incl.



No. 702 Eccentric Couplings

Copper to Copper
Sizes, ¾x½ to 4x3
Inches Incl.

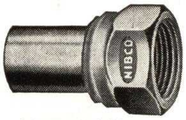


No. 703 Female Adapters

Copper to Female S.P.S.
Sizes, ¼ to 8 Inches Incl.

No. 703-R Reducing Female Adapters

Copper to Female S.P.S.
Sizes, ¼x⅜ to 2x1½
Inches Incl.

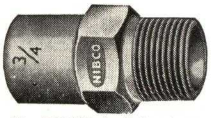


No. 703-2 Female Fitting Adapters

Fitting to Female S.P.S.
Sizes, ⅜ to 6 Inches Incl.

No. 730-2-R Reducing Female Fitting Adapters

Fitting to Female S.P.S.
Sizes, ½x¾ to 1x1¼
Inches Incl.

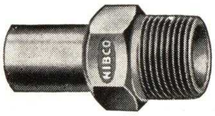


No. 704 Male Adapters

Copper to Male S.P.S.
Sizes, ¼ to 8 Inches Incl.

No. 704-R Reducing Male Adapters

Copper to Male S.P.S.
Sizes, ¼x⅜ to 2x1½
Inches Incl.

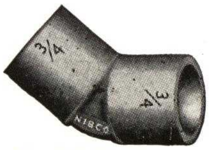


No. 704-2 Male Fitting Adapters

Fitting to Male S.P.S.
Sizes, ⅜ to 6 Inches, Incl.

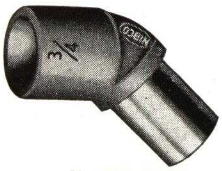
No. 704-2-R Reducing Male Fitting Adapters

Fitting to Male S.P.S.
Sizes, ½x¾ to 1¼x1½
Inches Incl.



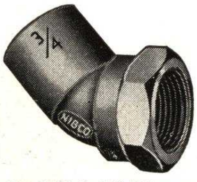
No. 706 45° Elbows

Copper to Copper
Sizes, ⅜ to 8
Inches Incl.



No. 706-2 45° Street Elbows

Copper to Fitting
Sizes, ⅜ to 2
Inches Incl.

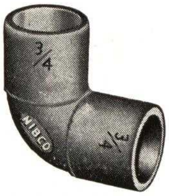


No. 706-3 45° Elbows

Copper to Female S.P.S.
Sizes, ⅜ to 1 Inch Incl.

No. 706-4 45° Elbows

Copper to Male S.P.S.
Sizes, ⅜ to 1 Inch Incl.

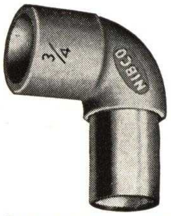


No. 707 90° Elbows

Copper to Copper
Sizes, ¼ to 8 Inches Incl.

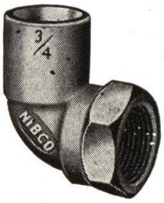
No. 707-R Reducing 90° Elbows

Copper to Copper
Sizes, ⅜x¼ to 8x6 Inches Incl.



No. 707-2 90° Street Elbows

Copper to Fitting
Sizes, ¼ to 4 Inches Incl.

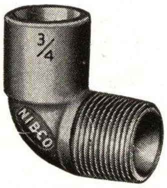


No. 707-3 90° Elbows

Copper to Female S.P.S.
Sizes, ¼ to 6 Inches Incl.

No. 707-3-R Reducing 90° Elbows

Copper to Female S.P.S.
Sizes, ⅜x½ to 1¼x1
Inches Incl.

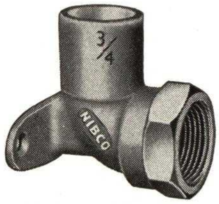


No. 707-4-R 90° Elbows

Copper to Male S.P.S.
Sizes, ¼ to 6 Inches Incl.

No. 707-4-R Reducing 90° Elbows

Copper to Male S.P.S.
Sizes, ⅜x½ to 1x¾
Inches Incl.

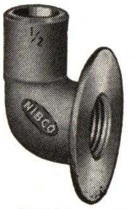


No. 707-3-5 90° Drop Ear Elbows

Copper to Female S.P.S.
Sizes, ⅜ to 1 Inch Incl.

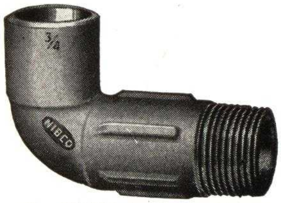
No. 707-3-5-R 90° Drop Ear Elbows

Copper to Female S.P.S.
Sizes, ⅜x½ and ½x⅜ Inches.



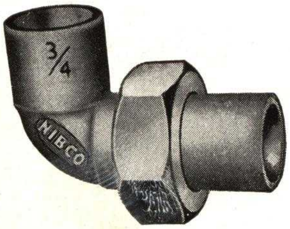
No. 708 Flanged Sink Elbows

Copper to Female S.P.S.
Sizes, ⅜x⅜ to ¾x¾
Inches Incl.



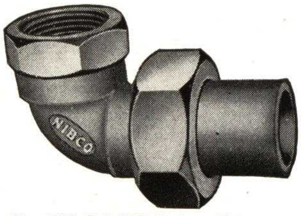
No. 709 Water Meter Elbows

Copper to Male S.P.S.
Size, ¾x¾ Inch.



No. 707-6 90° Union Elbows

Copper to Copper
Sizes, ⅜ to 2 Inches Incl.

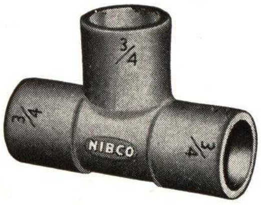


No. 707-3-6 90° Union Elbows

Female S.P.S. El to Copper Tail-piece
Sizes, ⅜ to 2 Inches Incl.

No. 707-4-6 90° Union Elbows

Male S.P.S. El to Copper Tail-piece
Sizes, ⅜ to 2 Inches Incl.

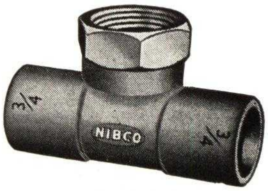


No. 711 Tees

Copper to Copper to Copper
Sizes, ¼ to 8 Inches Incl.

No. 711-R Reducing Tees

Copper to Copper to Copper
Sizes, ⅜x⅜x¼ to
8x8x6 Inches Incl.



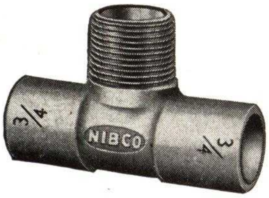
No. 712 Tees

Copper to Copper to Female S.P.S.
Sizes, ⅜ to 2 Inches Incl.

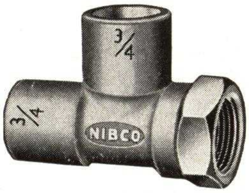
No. 712-R Reducing Tees

Copper to Copper to Female S.P.S.
Sizes, ⅜x⅜x½ to
2½x2½x¾ Inches Incl.

Series 700 Nibco Cast Solder Fittings

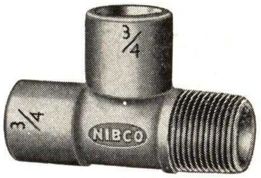


No. 713 Tees
Copper to Copper to
Male S.P.S. Sizes, ⅜ to
2 Inches Incl.

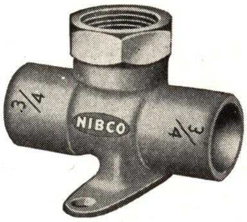


No. 714 Tees
Copper to Female S.P.S. to Copper
Sizes, ⅜ to 2 Inches Incl.

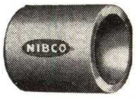
No. 714-R Reducing Tees
Copper to Female S.P.S. to Copper
Sizes, ¾x¾x½ to 1½x¾x1
Inches Incl.



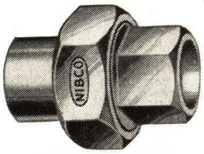
No. 715 Tees
Copper to Male S.P.S.
to Copper Sizes, ⅜ to
1 Inch Incl.



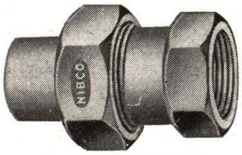
No. 712-5 Drop Ear Tees
Copper to Copper to
Female S.P.S.
Sizes, ⅜x⅜x½ to
1x1x1 Inch Incl.



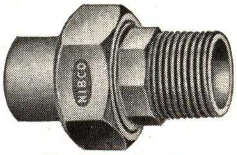
No. 717 Tube End Caps
Sizes, ¼ to 6
Inches Incl.



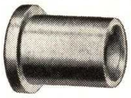
No. 733 Unions
Copper to Copper
Sizes, ¼ to 2 Inches
Incl.



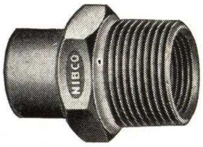
No. 733-3 Unions
Copper to Female S.P.S.
Sizes, ¼ to 2 Inches Incl.



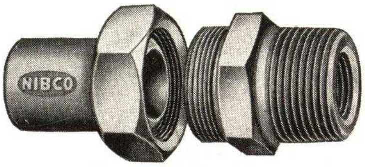
No. 733-4 Unions
Copper to Male S.P.S.
Sizes, ¼ to 2 Inches Incl.



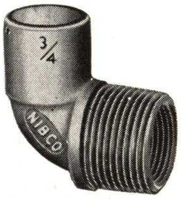
No. 716 Fitting End Plugs
Sizes, ¼ to 6 Inches Incl.



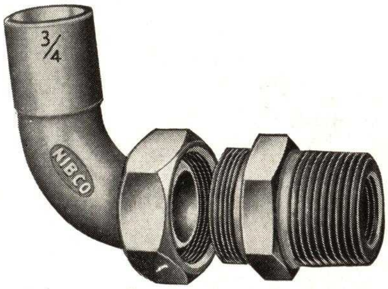
No. 720 Range Boiler Couplings
Copper to Male S.P.S.
to Female S.P.S.
Sizes, ½x1x½ to ¾x1x¾
Inch Incl.



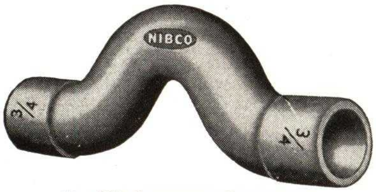
No. 720-6 Union Range Boiler Couplings
Copper to Male S.P.S. to Female S.P.S.
Sizes, ½x1x½ to ¾x1x¾ Inch Incl.



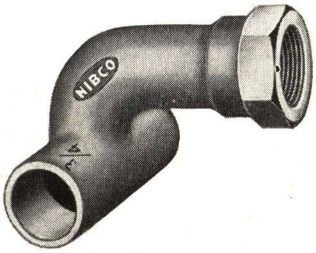
No. 721 90° Range Boiler Elbows
Copper to Male
S.P.S. to Female
S.P.S.
Sizes, ½x1x½ to
¾x1x¾ Inch Incl.



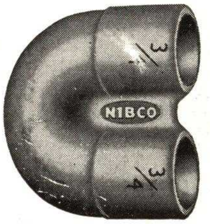
No. 721-6 Union Range Boiler Elbows
Copper to Male S.P.S. to Female S.P.S.
Sizes, ½x1x½ to ¾x1x¾ Inch Incl.



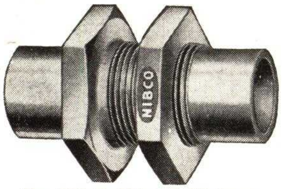
No. 736 Crossover Couplings
Copper to Copper
Sizes, ½ to 1 Inch Incl.



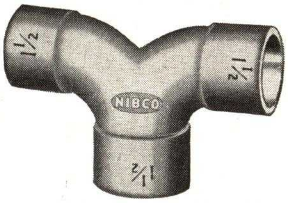
No. 737-3 Crossover Tees
Copper to Copper to Female S.P.S.
Also Available
Copper to Copper to Copper
Sizes, ½ to 1¼ Inches Incl.



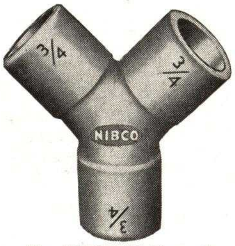
No. 739 Return Bend Closed
Copper to Copper
Sizes, ⅜ to 2 Inches Incl.



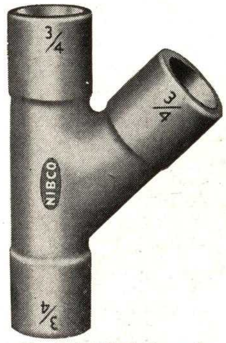
No. 750 Bulkhead Fittings
Copper to Copper
Sizes, ⅜ to 2 Inches Incl.



No. 711-12 Double Elbow Tees
Copper to Copper to Copper
Sizes 1x1x1 to 4x4x4 Inches Incl.



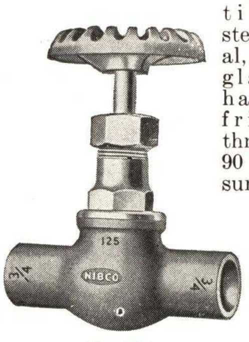
No. 748 90° Y-Branch
Copper to Copper to Copper
Sizes, ⅜ to 3 Inches Incl.



No. 749 45° Y-Branch
Copper to Copper to Copper
Sizes, ⅜ to 3 Inches Incl.

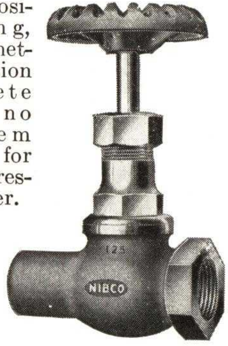
Nibco Bronze Globe Valves

125 Pounds Steam Working Pressure
No. 738, Copper to Copper
No. 738-3, Copper to Female S.P.S.



No. 738

Brass disc, positive seating, steam bronze metal, packing friction gland, no-hete handwheel, no friction stem threads, tested for 90 pounds air pressure under water.

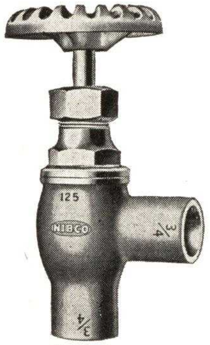


No. 738-3

Nom. Size...in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Nos. **738** or **738-3**......ea.	$2.10	2.15	2.65	4.10	5.25	7.00	10.05	14.00

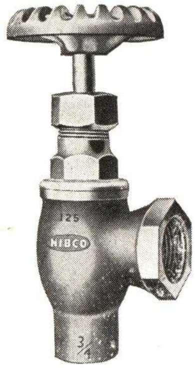
Nibco Bronze Angle Valves

125 Pounds Steam Working Pressure
No. 732, Copper to Copper
No. 732-3, Copper to Female S.P.S.



No. 732

Brass disc, positive seating, steam bronze metal, packing friction gland, no-hete handwheel, no friction stem threads, tested for 90 pounds air pressure under water.



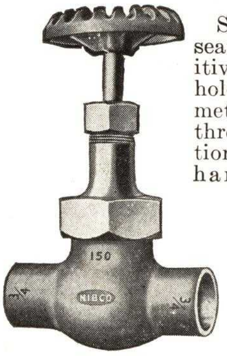
No. 732-3

Nominal Size.....in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Nos. **732** or **732-3**. ea.	$2.15	2.65	4.10	5.25	7.00	10.05	14.00

Drain or union end supplied on either inlet or outlet.

Nibco Bronze Globe Valves

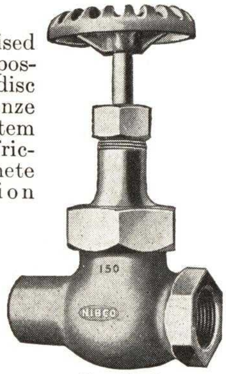
150 Pounds Steam Working Pressure
No. 734, Copper to Copper
No. 734-3, Copper to Female S.P.S.



No. 734

Steam disc, raised seat, incased disc, positive seating, lock disc holder, steam bronze metal, no friction stem threads, packing friction gland, no-hete handwheel, union bonnet nut, repack under pressure.

Packed 1 in a box.



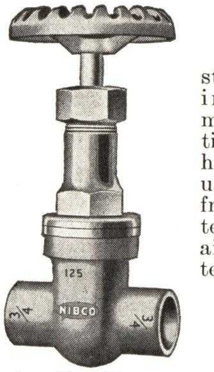
No. 734-3

Nom. Size..in.	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Nos. **734** or ***734-3**....ea.	$2.75	2.80	3.65	5.30	6.70	9.20	12.75	18.55

*Female thread furnished either on inlet or outlet.

Nibco Bronze Gate Valves

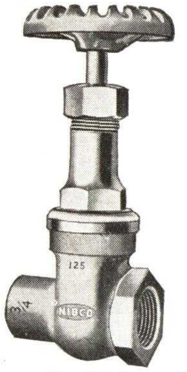
125 Pounds Steam Working Pressure
No. 729, Copper to Copper
No. 729-3, Copper to Female S.P.S.



No. 729

Double disc, rising stem, positive seating, steam bronze metal, packing friction gland, no-hete handwheel, repack under pressure, no friction stem threads, tested for 90 pounds air pressure under water.

Packed 1 in a box.



No. 729-3

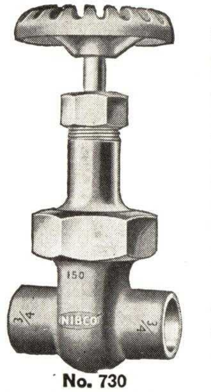
Nominal Size Inches	Nos. **729** or **729-3** Each
3/8	$2.60
1/2	2.65
3/4	3.40
1	4.20
1 1/4	$5.30
1 1/2	6.85
2	9.65
2 1/2	*20.90
3	*$29.50
3 1/2	40.75
4	48.35
...	.....

*Union nut bonnet type.
Bolted bonnet type—non-rising stem.

Nibco Bronze Gate Valves

150 Pounds Steam Working Pressure

No. 730, Copper to Copper
No. 730-3, Copper to Female S.P.S.

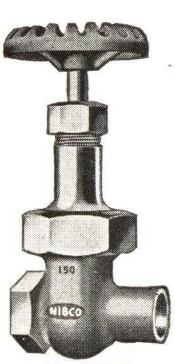


No. 730

Double disc, rising stem, positive seating, steam bronze metal, no friction stem threads, packing friction gland, no-hete handwheel, union bonnet nut, repack under pressure, tested for 90 pounds air pressure under water.

Drain or union end can be furnished on inlet or outlet.

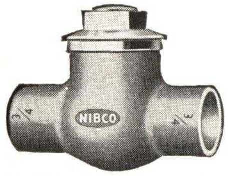
Packed 1 in a box.



No. 730-3

Nominal Size Inches	No. **730** or **730-3** Each
3/8	$2.90
1/2	2.95
3/4	3.55
1	4.65
1 1/4	$6.15
1 1/2	8.30
2	12.10
2 1/2	20.90
3	$29.50
*3 1/2	40.75
*4	48.35
...	.....

*Bolted bonnet type—non-rising stem.



No. 785 Bronze Swing Check Valves

125 Pounds Steam Working Pressure

For use on both horizontal and vertical lines.
Brass seat—brass disc.

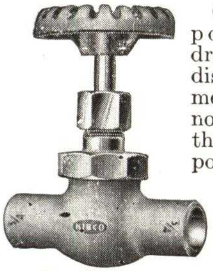
Nominal Size.in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2
No. **785**....each	$2.35	2.35	2.95	3.90	4.80	6.25	8.95

Tools

Copper and Brass Tubing Tools
Illustrated and Described on
Pages 380 and 381

Nibco Bronze Stops and Stops and Drains

Standard Pattern



No. 725 Stop

Composition disc, positive seating drainable seat, swivel disc, steam bronze metal, full waterway, no friction stem threads, tested for 90 pounds air pressure under water.

Packed 1 in a box.

No. 726 Stop and Drain

Stops

No. 725, Copper to Copper
No. 725-3, Copper to Female S.P.S.

Nominal Size......inches	3/8	1/2	3/4	1
Nos. 725 or 725-3.....each	$1.15	1.30	1.45	2.90

Stops and Drains

No. 726, Copper to Copper
No. 726-3, Copper to Female S.P.S.

Nominal Size......inches	3/8	1/2	3/4	1
Nos. 726 or 726-3.....each	$1.20	1.35	1.50	3.05

Nibco Bronze Angle Stops and Stop and Drains

No. 777 Angle Stop

Composition disc, positive seating, drainable seat, swivel disc, steam bronze metal, full waterway, no friction stem thread, tested for 90 pounds air pressure under water.

No. 778 Angle Stop and Drain

Angle Stops

No. 777, Copper to Copper
No. 777-3, Copper to Female

Nominal Size......................inches	1/2	3/4
Nos. 777 or 777-3....................each	$1.30	1.45

Angle Stops and Drains

No. 778, Copper to Copper
No. 778-3, Copper to Female

Nominal Size......................inches	1/2	3/4
Nos. 778 or 778-3....................each	$1.35	1.50

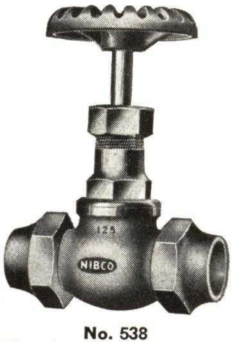
No. 762 Nibco Lawn Faucets

Angle Type

Copper Inlet to Hose Thread Outlet

Nominal Size......................inches	1/2	3/4
No. 762..............................each	$2.10	2.30

Nibco Bronze Flared Globe Valves



No. 538

125 Pounds Steam Working Pressure
No. 538, Copper to Copper
No. 538-3, Copper to Female S.P.S.
Approved by Underwriters' Laboratories

Brass disc, positive seating, steam bronze metal, packing friction gland, no-hete handwheel, no friction stem threads, tested for 90 pounds air pressure under water.

Nominal Size....in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Nos. 538 or 538-3..........ea.	$2.65	3.25	4.90	6.85	10.55	14.15	22.25

Nibco Bronze Flared Angle Valves

No. 532

125 Pounds Steam Working Pressure
No. 532, Copper to Copper
No. 532-3, Copper to Female S.P.S.
Approved by Underwriters Laboratories

Brass disc, positive seating, steam bronze metal, packing friction gland, no-hete handwheel, no friction stem threads, tested for 90 pounds air pressure under water.

Nominal Size Inches	Nos. 532 or 532-3 Each	Nominal Size Inches	Nos. 532 or 532-3 Each
3/8	$2.65	1 1/4	$10.55
1/2	3.25	1 1/2	14.15
3/4	4.90	2	22.25
1	6.85	...	.....

Nibco Bronze Flared Stops and Stops and Drains

No. 525

Composition disc, positive seating steam bronze metal, no friction stem thread, tested for 90 pounds air pressure under water.

Packed 1 in a box.

No. 526-3

Stops

No. 525, Copper to Copper
No. 525-3, Copper to Female S.P.S.

Nominal Size......inches	3/8	1/2	3/4	1
Nos. 525 or 525-3.....each	$1.75	1.85	2.20	3.65

Stops and Drains

No. 526, Copper to Copper
No. 526-3, Copper to Female S.P.S.

Nominal Size......inches	3/8	1/2	3/4	1
Nos. 526 or 526-3.....each	$1.85	1.90	2.30	3.80

No. 585 Nibco Flared Swing Check Valves

125 Pounds Steam Working Pressure
Copper to Copper

For use on both horizontal and vertical lines.

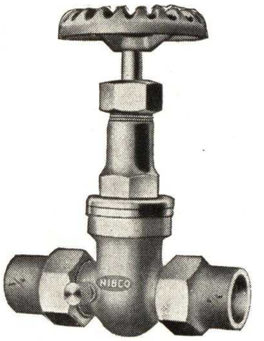
Brass seat—brass disc.

Nominal Size....in.	1/2	3/4	1
No. 585..........ea.	$2.75	3.60	4.90

Nibco Bronze Flared Gate Valves

125 Pounds Steam Working Pressure
Approved by Underwriters Laboratories

No. 579-3



No. 179-D with Waste

Double disc, rising stem, positive seating, steam bronze metal, packing friction gland, no-hete handwheel, no friction stem threads, tested for 90 pounds air pressure under water.

Without Waste
No. 579, Copper to Copper
No. 579-3, Copper to Female S.P.S.
No. 179, Copper to Copper

Nominal Size.....in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Nos. 579, 579-3 or 179..........ea.	$3.05	3.20	3.80	5.00	7.60	10.35	15.80

With Waste
No. 579-D, Copper to Copper
No. 579-3-D, Copper to Female S.P.S.
No. 179-D, Copper to Copper

Nominal Size.....in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Nos. 579-D, 579-3-D, or 179-D.......ea.	$3.75	3.90	4.50	5.70	8.30	11.05	16.50

No. 580 Nibco Oil Tank Valves

With Lead Disc
Male Inlet to Copper Outlet

Available in the following sizes: 3/8x3/8, 1/2x1/2, 1/2x3/8, 1/2x1/4, and 3/4x1/2 inches.

Nominal Size....in.	3/8	1/2	3/4
No. 580..........ea.	$1.40	1.40	1.85

Imperial S.A.E. Flare Brass Tees

For Connecting Brass and Copper Tubing

No. 44-F

No. 45-F

No. 51-F

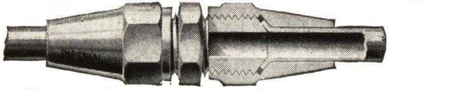
No. 53-F

O.D. Tube In.	*No. 44-F per 100	*No 45-F per 100	*No. 51-F per 100	*No. 53-F per 100	S.A.E. Thread In.	Pipe Thread In.	Std. Pkg.
1/8	......	......	......	$69.50	5/16x24	1/8	5
3/16	$30.00	$29.00	$29.00	72.00	3/8x24	1/8	5
1/4	32.50	31.50	31.50	77.50	7/16x20	1/8	†10
5/16	40.50	38.00	38.00	81.00	1/2x20	1/8	†10
3/8	63.50	60.00	60.00	87.00	5/8x18	1/4	5
7/16	91.50	92.50	92.50	.....	11/16x16	1/4	5
1/2	106.50	102.00	102.00	.....	3/4x16	3/8	5
5/8	272.00	261.50	261.50	.....	7/8x14	1/2	5
3/4	347.50	347.50	347.50	.....	1 1/16x14	1/2	..

*Prices do not include nuts.
†No. 53-F tee sizes 1/4 and 5/16-in. packed 5 in std. pkg.
No. 44-F furnished S.A.E. thread only.

Imperial S.A.E. Brass Tube Fittings

For Connecting Brass and Copper Tubing



Union Nuts

No. 41-F

No. 41-F

O.D. Tube	Per 100	Std. Lgth., In.	S.A.E. Thrd.	Std. Pkg.
1/8	$11.50	3/4	5/16x24	10
3/16	12.50	13/16	3/8x24	15
1/4	15.00	15/16	7/16x20	25
5/16	19.50	1 1/8	1/2x20	25
3/8	29.00	1 5/16	5/8x18	15
7/16	39.00	1 1/2	11/16x16	5
1/2	53.00	1 5/8	3/4x16	10
5/8	85.00	1 7/8	7/8x14	5
3/4	116.00	2 3/16	1 1/16x14	..
7/8	287.50	2 5/16	....	..
No. 41-FS				
1/8	$10.50	1/2	5/16x24	10
3/16	11.50	5/8	3/8x24	15
1/4	14.00	3/4	7/16x20	25
5/16	17.50	7/8	1/2x20	25
3/8	25.50	1	5/8x18	15
7/16	38.00	1 1/16	11/16x16	5
1/2	46.00	1 1/8	3/4x16	5
5/8	73.50	1 5/16	7/8x14	5
3/4	109.50	1 1/2	1 1/16x14	..

No. 41-FS

No. 42-F Union Couplings

O.D. Tube, In.	*Per 100	S.A.E. Thread, In.	Std. Pkg.
1/8	$19.50	5/16x24	5
3/16	22.00	3/8x24	10
1/4	24.00	7/16x20	15
5/16	26.50	1/2x20	15
3/8	40.50	5/8x18	10
7/16	52.00	11/16x16	5
1/2	63.50	3/4x16	5
5/8	106.00	7/8x14	5
3/4	149.50	1 1/16x14	..
7/8	345.00	......	..

No. 43-F Ball Checks

O.D. Tube In.	*Per 100	S.A.E. Thread In.	Pipe Thread In.	Std. Pkg.
3/16	$37.00	3/8x24	1/8	5
1/4	39.00	7/16x20	1/8	5
5/16	43.50	1/2x20	1/8	5
3/8	60.00	5/8x18	1/4	5
7/16	73.50	11/16x16	1/4	5
1/2	86.50	3/4x16	3/8	5

Female Couplings

No. 46-F

3/16	$18.50	3/8x24	1/8	10
1/4	19.50	7/16x20	1/8	15
1/4	27.50	7/16x20	1/4	10
5/16	23.00	1/2x20	1/8	15
5/16	30.00	1/2x20	1/4	10
3/8	34.50	5/8x18	1/8	10
3/8	37.00	5/8x18	1/4	10
3/8	58.50	5/8x18	3/8	5
7/16	49.50	11/16x16	1/4	5
7/16	63.50	11/16x16	3/8	5
1/2	60.00	3/4x16	3/8	5
1/2	84.00	3/4x16	1/2	5
5/8	129.00	7/8x14	1/2	5
3/4	190.00	1 1/16x14	1/2	..

No. 48-F Half Union Couplings

O.D. Tube In.	*Per 100	S.A.E. Thread In.	Pipe Thread In.	Std. Pkg.
1/8	$12 50	5/16x24	1/8	10
3/16	14.00	3/8x24	1/8	15
†1/4	15.00	7/16x20	1/8	25
1/4	25.50	7/16x20	1/4	10
†5/16	19.50	1/2x20	1/8	25
5/16	27.50	1/2x20	1/4	10
3/8	37.00	5/8x18	1/8	10
†3/8	40.50	5/8x18	1/4	15
3/8	52.00	5/8x18	3/8	10
7/16	43.50	11/16x16	1/4	5
1/2	52.00	3/4x16	3/8	5
1/2	103.50	3/4x16	1/2	5
5/8	103.50	7/8x14	1/2	5
3/4	115.00	1 1/16x14	1/2	..

No. 49-F Elbows

1/8	$21.00	5/16x24	1/8	10
3/16	22.00	3/8x24	1/8	15
†1/4	23.50	7/16x20	1/8	25
1/4	34.00	7/16x20	1/4	10
†5/16	27.00	1/2x20	1/8	25
5/16	41.00	1/2x20	1/4	10
3/8	48.00	5/8x18	1/8	10
†3/8	51.50	5/8x18	1/4	15
3/8	70.00	5/8x18	3/8	10
7/16	60.50	11/16x16	1/4	5
1/2	70.00	3/4x16	3/8	5
1/2	163.00	.....	1/2	5
5/8	163.00	7/8x14	1/2	5
3/4	221.50	1 1/16x14	1/2	..

No. 50-F Elbows

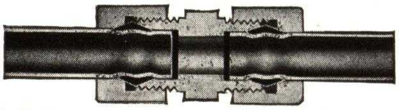
3/16	$27.00	3/8x24	1/8	5
1/4	28.00	7/16x20	1/8	10
5/16	32.50	1/2x20	1/8	10
3/8	70.00	5/8x18	1/4	5
7/16	93.50	11/16x16	1/4	5
1/2	128.50	3/4x16	3/8	5
5/8	186.50	7/8x14	3/8	5
5/8	186.50	7/8x14	1/2	5

No. 55-F Elbows

1/4	$28.00	7/16x20	..	10
5/16	29.00	1/2x20	..	10
3/8	46.50	5/8x18	..	5
7/16	70.00	11/16x16	..	5
1/2	76.00	3/4x16	..	5
5/8	163.00	7/8x14	..	5
3/4	233.00	1 1/16x14	..	..

*Prices do not include nuts. †Same tubing size furnished in various iron pipe thread sizes. This size is standard.

Imperial Brass Compression Fittings



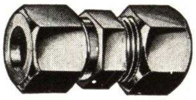
No. 60-F Sleeves

O.D. of Tube Inches	Per 100	Std. Pkg.
1/8	$2.50	50
5/32	3.00	15
3/16	2.50	100
1/4	2.50	100
5/16	3.00	100
3/8	4.00	50
7/16	7.50	15
1/2	12.00	15
5/8	16.50	10
3/4	24.00	..
1	53.00	..

No. 61-F Nuts

O.D. of Tube Inches	Per 100	Std. Pkg.
1/8	$6.00	15
5/32	8.00	10
3/16	6.50	15
1/4	7.00	25
5/16	9.00	25
3/8	11.50	15
7/16	20.50	10
1/2	24.00	10
5/8	35.50	5
3/4	44.50	..

No. 62-F Unions

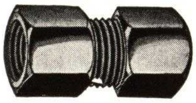


O.D. of Tube Inches	*Per 100	Std. Pkg.
1/8	$25.50	10
5/32	32.00	5
3/16	26.50	10
1/4	29.00	15
5/16	35.50	15
3/8	45.00	10
7/16	84.00	5
1/2	109.50	10
5/8	167.00	5
3/4	240.50	..

No. 63-F Checks

O.D. of Pipe Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$38.00	1/8	5
3/16	39.00	1/8	5
1/4	41.50	1/8	5
5/16	45.00	1/8	5
3/8	60.00	1/4	5
1/2	141.50	3/8	5

No. 66-F Female Couplings



O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$19.50	1/8	10
3/16	20.50	1/8	10
3/16	37.00	1/4	5
1/4	23.00	1/8	15
1/4	37.00	1/4	10
5/16	25.50	1/8	15
5/16	46.00	1/4	10
3/8	46.00	1/8	10
3/8	48.50	1/4	10
7/16	83.00	1/4	5
1/2	99.00	3/8	5
5/8	144.00	3/8	5
5/8	144.00	1/2	5
3/4	230.00	1/2	..

No. 68-F Connections

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.	O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$16.00	1/8	10	†3/8	$39.00	1/4	15
3/16	17.50	1/8	15	3/8	66.50	3/8	5
†1/4	19.50	1/8	25	7/16	69.00	1/4	5
1/4	25.50	1/4	15	1/2	84.00	3/8	10
†5/16	23.00	1/8	25	1/2	108.00	1/2	5
5/16	29.00	1/4	15	5/8	108.00	1/2	5
3/8	35.50	1/8	10	3/4	155.50	1/2	..

*Prices include nuts and sleeves.

†The same tubing size is furnished in various iron pipe thread sizes. This size is standard.

Imperial Brass Compression Fittings

No. 65-F Elbows

O.D. of Tube Inches	*Per 100	Std. Pkg.
1/8	$39.00	5
3/16	40.50	5
1/4	41.50	10
5/16	52.00	10
3/8	59.00	10
7/16	106.00	5
1/2	126.00	5
5/8	219.50	5
3/4	279.50	..

No. 69-F Elbows

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$27.50	1/8	10
3/16	29.00	1/8	15
1/4	30.00	1/8	25
1/4	36.00	1/4	15
5/16	37.00	1/8	25
5/16	46.00	1/4	15
3/8	53.00	1/8	10
3/8	56.50	1/4	15
3/8	92.50	3/8	5
7/16	100.50	1/4	5
1/2	122.50	3/8	10
1/2	175.50	1/2	5
5/8	175.50	1/2	5
3/4	228.50	1/2	..

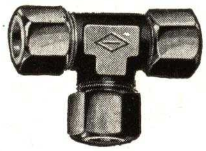
No. 70-F Elbows

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$25.50	1/8	5
3/16	29.00	1/8	5
1/4	32.50	1/8	10
5/16	41.50	1/8	10
3/8	60.00	1/4	5
7/16	84.00	1/4	5
1/2	116.50	3/8	5

No. 73-F Elbow Checks

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$52.00	1/8	5
3/16	54.00	1/8	5
1/4	57.50	1/8	5
5/16	64.50	1/8	5
3/8	83.00	1/4	5

No. 64-F Tees



O.D. of Tube Inches	*Per 100	Std. Pkg.
1/8	$45.50	5
3/16	47.00	5
1/4	51.50	10
5/16	56.50	10
3/8	82.00	5
7/16	140.50	5
1/2	211.00	5
5/8	294.00	5
3/4	411.50	..

No. 71-F Tees

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$37.50	1/8	5
3/16	40.00	1/8	5
1/4	47.00	1/8	10
5/16	51.50	1/8	10
3/8	67.00	1/4	5
7/16	122.00	1/4	5
1/2	185.00	3/8	5
5/8	242.50	1/2	5
3/4	328.00	1/2	..

No. 72-F Tees

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$37.50	1/8	5
3/16	40.00	1/8	5
1/4	47.00	1/8	10
5/16	51.50	1/8	10
3/8	67.00	1/4	5
7/16	122.00	1/4	5
1/2	185.00	3/8	5
5/8	246.00	1/2	5
3/4	328.00	1/2	..

No. 76-F Male and Female Tees

O.D. of Tube Inches	*Per 100	Pipe Thread Inches	Std. Pkg.
1/8	$47.00	1/8	5
3/16	51.50	1/8	5
1/4	56.50	1/8	5
5/16	62.00	1/8	5
3/8	88.00	1/4	5

*Prices of fittings include nuts and sleeves.

Type D Imperial Threaded Sleeve Brass Fittings

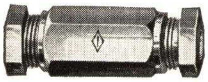
No. 181-D Nuts

O.D. Tube In.	Incl. Nuts per 100	Std. Pkg.
⅛	$8.00	15
3/16	8.50	25
¼	9.00	25
5/16	12.00	25
⅜	15.50	15
½	36.00	10

No. 188-D Connectors

O.D. Tube In.	Incl. Nuts per 100	Iron Pipe Thread In.	Std. Pkg.
⅛	$18.50	⅛	5
3/16	19.50	⅛	10
*¼	22.00	⅛	15
¼	29.00	¼	10
*5/16	29.00	⅛	15
5/16	32.00	¼	10
*⅜	43.50	¼	10
⅜	40.50	⅛	5
½	92.00	⅜	5

No. 182-D Unions



O.D. Tube In.	Incl. Nuts per 100	Std. Pkg.
⅛	$35.50	5
3/16	39.00	10
¼	41.50	10
5/16	52.00	10
⅜	57.50	10
½	126.50	5

No. 189-D Elbows

O.D. Tube In.	Incl. Nuts per 100	Iron Pipe Thread In.	Std. Pkg.
⅛	$34.00	⅛	5
3/16	35.50	⅛	10
*¼	36.50	⅛	15
¼	51.50	¼	10
*5/16	45.50	⅛	15
5/16	53.00	¼	10
*⅜	70.50	¼	10
⅜	70.50	⅛	5
½	151.50	⅜	5

*The same tubing size is furnished in various iron pipe thread sizes. This size is standard.

Brass Nipples

Iron Pipe Size

No. 652 Close

No. 653 Shoulder or Short

Made from highest quality, new seamless tubing, accurately threaded, reamed and chamfered.

Close Nipples

Size Inches	Each	Length Inches	Size Inches	Each	Length Inches	Size Inches	Each	Length Inches
⅛	$.11	¾	1	$.37	1½	3	$2.50	2⅝
¼	.13	⅞	1¼	.60	1⅝	3½	4.00	2¾
⅜	.15	1	1½	.70	1¾	4	4.75	2⅞
½	.23	1⅛	2	1.00	2	5	8.50	3
¾	.28	1⅜	2½	1.70	2½	6	11.50	3⅛

Shoulder or Short Nipples

	Each									
	Length, Inches									
Size Inches	1½	2	2½	3	3½	4	4½	5	5½	6
⅛	$.13	$.15	$.17	$.19	$.21	$.23	$.25	$.27	$.29	$.31
¼	.16	.19	.22	.25	.28	.31	.34	.37	.40	.43
⅜	.19	.23	.27	.31	.35	.39	.43	.47	.51	.55
½	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70
¾	...	.35	.42	.49	.56	.63	.70	.77	.84	.91
1	...	.44	.53	.62	.71	.80	.89	.98	1.07	1.16
1¼	...	...	.75	.88	1.01	1.14	1.27	1.40	1.53	1.66
1½	...	...	.90	1.05	1.20	1.35	1.50	1.65	1.80	1.95
2	...	...	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60
2½	...	...	....	2.00	2.30	2.60	2.90	3.20	3.50	3.80
3	...	...	....	2.90	3.30	3.70	4.10	4.50	4.90	5.30
3½	...	...	....	....	....	5.40	6.00	6.60	7.20	7.80
4	...	...	....	....	....	6.15	6.85	7.55	8.25	8.95
5	...	...	....	....	....	....	10.60	11.65	12.70	13.75
6	...	...	....	....	....	....	14.10	15.40	16.70	18.00

For finished brass nipples, add 50 per cent.

For finished and nickel plated brass nipples longer than close add 75 per cent.

For nickel plated close nipples, add 25 per cent.

For chromium plated brass nipples, add 100 per cent.

For right and left nipples, add 50 per cent.

Brass Pipe Fittings

For 100 Pounds Working Pressure

Iron Pipe Thread

No. 100-B Elbows

Size In.	Per 100	Std. Pkg.
⅛	$25.00	10
¼	33.50	10
⅜	62.00	5
½	110.00	5

No. 101-B Tees

Size In.	Per 100	Std. Pkg.
⅛	$33.00	15
¼	45.50	15
⅜	92.00	10
½	147.00	5

No. 102-B Crosses

Size In.	Per 100	Std. Pkg.
⅛	$48.50	5
¼	63.50	5
⅜	101.00	5
½	144.00	5

No. 103-B Couplings

Size In.	Per 100	Std. Pkg.
⅛	$19.50	25
¼	33.50	15
⅜	49.50	10
½	87.50	5

No. 104-B Unions

Size In.	Per 100	Std. Pkg.
⅛	$84.00	10
¼	118.50	5
⅜	172.50	5
½	176.00	5

No. 108-B Caps

Size In.	Per 100	Std. Pkg.
⅛	$18.50	15
¼	25.50	15
⅜	35.50	10
½	53.00	5

No. 109-B Plugs Square Head

Size In.	Per 100	Std. Pkg.
⅛	$12.50	25
¼	18.50	15
⅜	29.00	10
½	33.50	5

No. 110-B Bushings

Size In.	Per 100	Std. Pkg.
¼x⅛	$16.00	25
⅜x¼	23.00	15
⅜x⅛	23.00	15
½x⅜	34.50	10
½x¼	34.50	10
½x⅛	34.50	10

No. 111-B Lock Nuts

Size In.	Per 100	Std. Pkg.
⅛	$15.00	10
¼	17.50	10
⅜	27.50	5
½	35.50	5

No. 112-B Close Nipples

Size In.	Per 100	Std. Pkg.
⅛	$15.00	25
¼	20.50	15
⅜	34.50	10
½	49.50	5

No. 113-B Long Nipples

Size In.	Lgth. In.	Per 100	Std. Pkg.
⅛	1½	$20.50	10
¼	1½	27.50	10
⅜	1½	37.00	10
½	1½	57.50	5
⅛	2	25.50	10
¼	2	33.50	10
⅜	2	45.00	10
½	2	63.50	5
⅛	2½	29.00	10
¼	2½	38.00	10
⅜	2½	48.50	10
½	2½	71.50	5
⅛	3	31.00	10
¼	3	41.50	10
⅜	3	57.50	10
½	3	78.00	5
⅛	3½	37.00	10
¼	3½	47.00	10
⅜	3½	64.50	10
½	3½	86.50	5

No. 116-B Street Elbows

Size In.	Per 100	Std. Pkg.
⅛	$24.00	25
¼	33.50	15
⅜	62.00	10
½	109.00	5

No. 117-B Plugs Slotted Head

Size In.	Per 100	Std. Pkg.
⅛	$10.50	25
¼	16.00	15
⅜	20.50	10

No. 118-B Wing Plugs

Size In.	Per 100	Std. Pkg.
⅛	$23.00	25
¼	26.50	15
⅜	34.50	10
½	46.00	5

No. 119-B Reducing Bushings

Size In.	Per 100	Std. Pkg.
¼x⅛	$26.50	15
⅜x¼	39.00	10
½x⅜	50.50	5

No. 120-B Adapters

Thrd., In. Fem. Male	Per 100	Std. Pkg.
⅛x⅛	$24.00	15
¼x⅛	26.50	10
⅜x¼	39.00	10
½x⅜	50.50	5

No. 121-B Plugs

Size In.	Per 100	Std. Pkg.
⅛	$15.00	25
¼	18.50	15
⅜	25.50	10
½	38.00	5
¾	85.00	5

No. 122-B Hex Nipples

Size In.	Per 100	Std. Pkg.
⅛	$17.50	25
¼	27.50	15
⅜	34.50	10
½	52.00	5

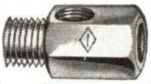
No. 123-B Reducing Nipples

Size In.	Per 100	Std. Pkg.
¼x⅛	$26.50	15
⅜x¼	39.00	10

No. 124-B 45° Street Elbows

Size In.	Per 100	Std. Pkg.
⅛	$30.00	10
¼	51.50	10
⅜	69.00	5
½	86.00	5

No. 125-B Tees



Size In.	Per 100	Std. Pkg.
⅛	$57.50	10

No. 126-B Oil Filter Elbows

Restricted to ⅛-inch opening.

Thrd., In. Fem. Male	Per 100	Std. Pkg.
⅛x⅛	$41.50	10

No. 128-B Reducing Street Elbows

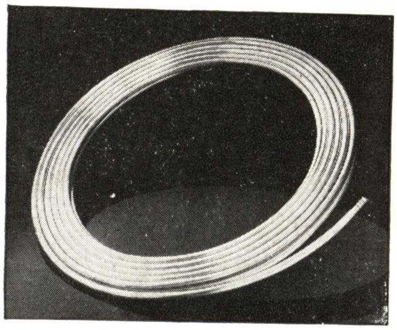
Size In.	Per 100	Std. Pkg.
¼x⅛	$36.50	5

No. 127-B Tees

Size In.	Per 100	Std. Pkg.
⅛	$56.50	10

Chase Dehydrated Copper Refrigeration Tubes

Deoxidized—Bright Annealed—Ends Sealed



Paper wrapped coils of 50 or 100 feet. Other lengths can be furnished on special order. Prices upon application.

O.D. In.	Wall In.	Approx. Weight, Pounds Per Ft.	Per 50 Ft.	Per 100 Ft.	No. Feet Per Lb.
1/8	.035	.0384	1.92	3.84	26.04
3/16	.035	.0650	3.25	6.50	15.38
1/4	.035	.0916	4.58	9.16	10.91
5/16	.035	.118	5.90	11.80	8.47
3/8	.035	.145	7.25	14.50	6.89
7/16	.035	.172	8.60	17.20	5.81
1/2	.035	.198	9.90	19.80	5.05
5/8	.035	.251	12.55	25.10	3.98
3/4	.035	.305	15.25	30.50	3.27

We are as near as your nearest telephone.

Seamless Red Brass and Copper Pipe

Regular Weight

Made from the best grades of copper and zinc.

Brass pipe does not rust, therefore it has a long life. It insures a full flow of clear water.

Std. Pipe Size Inches	O.D Inches	Wall Inches	Red Brass Wt. Lb. per Ft.	Red Brass Per Lineal Foot	Copper Wt. Lb. per Ft.	Copper Per Lineal Foot
1/8	.405	.062	.253	.....	.259	.....
1/4	.540	.082	.447	.....	.457	.....
3/8	.675	.090	.627	.....	.641	.....
1/2	.840	.107	.934	.....	.955	.....
3/4	1.050	.114	1.27	.....	1.30	.....
1	1.315	.126	1.78	.....	1.82	.....
1 1/4	1.660	.146	2.63	.....	2.69	.....
1 1/2	1.900	.150	3.13	.....	3.20	.....
2	2.375	.156	4.12	.....	4.22	.....
2 1/2	2.875	.187	5.99	.....	6.12	.....
3	3.500	.219	8.56	.....	8.75	.....
3 1/2	4.000	.250	11.2	.....	11.4	.....
4	4.500	.250	12.7	.....	12.9	.....
4 1/2	5.000	.250	14.1	.....	14.5	.....
5	5.563	.250	15.8	.....	16.2	.....
6	6.625	.250	19.0	.....	19.4	.....
7	7.625	.281	24.6	.....	25.1	.....
8	8.625	.312	30.9	.....	31.6	.....
9	9.625	.344	38.0	.....	38.9	.....
10	10.750	.365	45.2	.....	46.2	.....
11	11.750	.375	50.8	.....	51.9	.....
12	12.750	.375	55.3	.....	56.5	.....

Standard Rough Brass Screwed Fittings

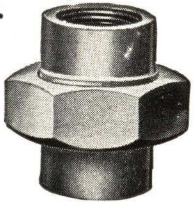
Flat Band Pattern—For 125 Pounds S.W.P.

No. 625
90° Elbow

No. 626
45° Elbow

No. 627
Tee

No. 629
Cross



No. 655
Union

No. 658
Floor Flange

Nickel-plated fittings furnished at an advance of 133⅓% over rough prices; tinned fittings at 100% over rough prices.

Size ... inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Bushings Hex. (Reducing 1 or 2 Sizes) ... each	...	$.08	$.08	$.10	$.14	$.21	$.35	$.45	$.65	$1.30	$2.00	$4.00
Bushings Hex. (Red. 3 or More Sizes) ... each	...	...	...	.12	.17	.25	.42	.54	.78	1.56	2.40	4.80
Bushings Face (Reducing 2 Sizes) ... each	...	.19	.19	.22	.30	.45	.60	.76	.96	....	....	....
Caps ... each	$.11	.11	.11	.13	.18	.27	.45	.57	.95	1.60	2.30	4.40
Couplings, Right Hand ... each	.11	.11	.11	.14	.21	.36	.58	.70	1.16	1.75	2.50	4.60
Couplings, Right and Left ... each	.29	.29	.29	.34	.40	.60	.80	.90	1.50	2.25	3.30	....
Couplings Reducing (Reducing 1 or 2 Sizes) ... each	...	.12	.12	.16	.23	.40	.64	.77	1.28	1.95	2.75	5.00
Couplings Red. (Reducing 3 or More Sizes) ... each	...	...	...	...	.25	...	...	.84	1.40	....	....	....
Crosses ... each	.32	.32	.32	.42	.58	.79	1.26	1.63	3.00	5.60	9.50	17.00
Elbows 90° ... each	.11	.11	.11	.14	.21	.36	.59	.75	1.20	2.45	3.63	7.20
Elbows Reducing ... each	...	.15	.15	.18	.25	.45	.70	.90	1.55	2.75	4.35	8.00
Elbows 45° ... each	.13	.13	.13	.15	.23	.40	.65	.83	1.32	2.68	3.98	7.90
Elbows 90° Street ... each	.17	.17	.17	.22	.30	.50	.80	1.05	1.75	....	....	....
Elbows 45° Street ... each	.17	.17	.17	.22	.30	.50	.80	1.05	1.75	....	....	....
Floor Flanges ... each	...	.28	.30	.35	.47	.75	.85	1.20	1.65	....	....	....
Lock Nuts ... each	.06	.06	.06	.10	.12	.18	.27	.35	.55	1.00	1.55	3.00
Plugs Square Head ... each	...	...	...	.13	.15	.20	.30	.38	.63	1.00	1.60	3.00
Plugs Solid ... each	.11	.11	.11	.13	.18	.27	.45	.57	.95	1.65	2.70	6.50
Plugs Countersunk ... each	...	...	...	.13	.18	.27	.45	.57	.95	1.65	2.70	6.50
Return Bends Close Pattern ... each	...	...	...	.35	.55	.90	....	....	....	....	....	....
Return Bends Open Pattern ... each	...	...	...	.45	.75	1.20	1.70	2.30	4.35	....	....	....
Tees ... each	.17	.17	.17	.22	.30	.50	.80	1.05	1.75	3.25	5.00	10.50
Tees Reducing (Reducing 1 Opening) ... each	...	.20	.20	.26	.36	.60	.95	1.25	2.10	3.90	6.00	12.60
Tees Reducing (Reducing 2 Openings) ... each	...	...	.22	.29	.39	.65	1.05	1.40	2.30	4.25	....	....
Unions ... each	...	.40	.40	.48	.66	.88	1.28	1.52	2.28	4.15	6.40	....
Y Branches ... each	...	...	.40	.45	.60	1.00	1.60	2.10	3.50	....	....	....

Cast Iron Water Pipe

Bell and Spigot

Standard Thickness and Weights of Cast Iron Pipe

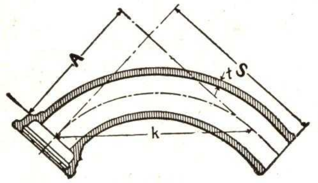
Nom. I.D. In.	Class A Gas 100-Ft. Head 43 Lbs. Press. Thickness In.	Class A Wt. Lbs. per Ft.	Class B Standard 200-Ft. Head 86 Lbs. Press. Thickness In.	Class B Wt. Lbs. per Ft.	Class C Medium Heavy 300-Ft. Head 130 Lbs. Press. Thickness In.	Class C Wt. Lbs. per Ft.	Class D Extra Heavy 400-Ft. Head 173 Lbs. Press. Thickness In.	Class D Wt. Lbs. per Ft.
3	.38	13.9	.42	15.4	....	......	....	......
4	.42	20	.45	21.7	.48	23.3	.52	25
6	.44	30.8	.48	33.3	.51	35.8	.55	38.3
8	.46	42.9	.51	47.5	.56	52.1	.60	55.8
10	.50	57.1	.57	63.8	.62	70.8	.68	76.7
12	.54	72.5	.62	82.1	.68	91.7	.75	100
14	.57	89.6	.66	102.5	.74	116.7	.82	129.2
16	.60	108.3	.70	125	.80	143.8	.89	158.3
18	.64	129.2	.75	150	.87	175	.96	191.7
20	.67	150	.80	175	.92	208.3	1.03	229.2
24	.76	204.2	.89	233.3	1.04	279.2	1.16	306.7
30	.88	291.7	1.03	333.3	1.20	400	1.37	450
36	.99	391.7	1.15	454.2	1.36	545.8	1.58	625
42	1.10	512.5	1.28	591.7	1.54	716.7	1.78	825
48	1.26	666.7	1.42	750	1.71	908.3	1.96	1050
54	1.35	800	1.55	933.3	1.90	1141.7	2.23	1341.7
60	1.39	916.7	1.67	1104.2	2	1341.7	2.38	1583.3
72	1.62	1283.4	1.95	1545.8	2.39	1904.2	....	......
84	1.72	1633.4	2.22	2104.2	....	......	....	......

All lengths to lay 12 feet. All weights are approximate; those per foot include allowance for bell. All pipe is tested by water pressure. Turned and bored pipe made to order only. Two-inch pipe and fittings also furnished.

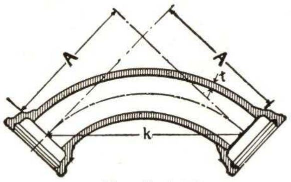
Approximate Weights of Lead and Hemp Required for Joints

Pipe In.	Wt., Lbs. Lead	Wt., Lbs. Hemp	Pipe In.	Wt., Lbs. Lead	Wt., Lbs. Hemp	Pipe In.	Wt., Lbs. Lead	Wt., Lbs. Hemp
3	6.	.18	**16**	30	.94	**48**	85.5	4.37
4	7.5	.21	**18**	33.8	1	**54**	97.6	6.25
6	10.25	.31	**20**	37	1.25	**60**	108.3	8.25
8	13.25	.44	**24**	44	1.50	**72**	128	12.50
10	16	.53	**30**	54.25	2.06	**84**	147	15.00
12	19	.61	**36**	64.75	3	..	.....	.....
14	22	.81	**42**	75.25	3.62	..	.....	.....

90° Quarter Bends



No. A-1104
Bell and Spigot



No. A-1106
Double Bell

Depth of bell, 3 to 18-inch, 4.00 inches.

Nominal Diameter Inches	Class	Dimensions, Inches t	r	k	s	*Approximate Weight, Pounds No. A-1104	No. A-1106
3	D	.48	16	22.60	24	65	75
4	D	.52	16	22.60	24	82	100
6	D	.55	16	22.60	24	130	150
8	D	.60	16	22.60	26	200	240
10	D	.68	16	22.60	28	278	325
12	D	.75	16	22.60	28	366	440
14	B	.66	18	25.50	30	406	500
14	D	.82	18	25.50	30	504	600
16	B	70	24	34.00	36	594	700
16	D	.89	24	34.00	36	750	860
18	B	.75	24	34.00	36	710	850
18	D	.96	24	34.00	36	888	1000

*Weights may vary 10 per cent over or under.

Specials for Cast Iron Pipe

Class D

90° Quarter Bends

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
4	82	**16**	750
6	130	**18**	888
8	200	**20**	1070
10	278	**24**	1656
12	366	**30**	2836
14	504	**36**	4820

45° Eighth Bends

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
4	66	**12**	265	**20**	964
6	105	**14**	442	**24**	1515
8	150	**16**	558	**30**	2291
10	202	**18**	663	**36**	4012

22½° Sixteenth Bends

4	66	**10**	202	**16**	484	**24**	1372
6	105	**12**	265	**18**	574	**30**	2080
8	150	**14**	382	**20**	858	**36**	4012

Tees

Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4	128	**10x10x 6**	352	**16x16x16**	969
6x 6x 6	200	**10x10x 4**	338	**16x16x12**	861
6x 6x 4	183	**12x12x12**	512	**20x20x20**	1438
8x 8x 8	294	**12x12x10**	491	**24x24x24**	2113
8x 8x 6	270	**12x12x 8**	474	**30x30x30**	3660
8x 8x 4	255	**12x12x 6**	458	**36x36x36**	5567
10x10x10	395	**12x12x 4**	445	**48x48x48**	....
10x10x 8	371	**14x14x14**	724	....	....

Crosses

Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.	Size, In.	Wt., Lbs.
4x 4x 4x 4	166	**10x10x 6x 6**	406	**16x16x16x16**	1259
6x 6x 6x 6	257	**10x10x 4x 4**	377	**18x18x18x18**	1454
6x 6x 4x 4	221	**12x12x12x12**	623	**20x20x20x20**	1828
8x 8x 8x 8	372	**12x12x10x10**	577	**24x24x24x24**	2694
8x 8x 6x 6	325	**12x12x 8x 8**	545	**30x30x30x30**	4609
8x 8x 4x 4	294	**12x12x 6x 6**	512	**36x36x36x36**	6857
10x10x10x10	493	**12x12x 4x 4**	486	**48x48x48x48**	....
10x10x 8x 8	443	**14x14x14x14**	963	....	....

Plug

Plugs and Caps

Cap

Size In.	Wt., Lbs. Plug	Wt., Lbs. Cap	Size In.	Wt., Lbs. Plug	Wt., Lbs. Cap	Size In.	Wt., Lbs. Plug	Wt., Lbs. Cap
4	8	26	**14**	65	149	**30**	723	704
6	14	40	**16**	96	198	**36**	1050	1084
8	24	59	**18**	121	242	**48**	2047	2341
10	38	81	**20**	156	308	**54**	2733	3009
12	50	104	**24**	472	442	**60**	3397	3687

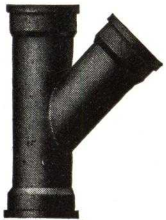
Sleeves

Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
4	15	61	**14**	18	280	**30**	24	1262
6	15	87	**16**	24	443	**36**	24	1772
8	15	119	**18**	24	518	**48**	24	2879
10	18	176	**20**	24	625	**54**	24	3571
12	18	223	**24**	24	821	**60**	24	4231

Specials for Cast Iron Pipe

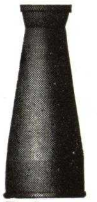
Class D

Y Branches

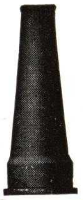


Y Branch

Size, In.	Wt., Lbs.
4x 4	103
6x 6	181
8x 8	291
10x10	434
12x12	632
14x14	985
16x16	1413
18x18	1737
20x20	2199
24x24	3599



Reducer



Increaser

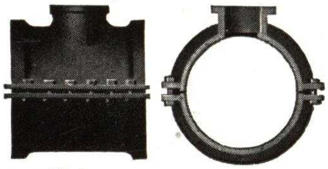
Reducers

Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
6x 4	97	12x 6	202	16x10	364	20x12	576
8x 6	143	12x 4	179	18x16	569	24x20	987
8x 4	119	14x12	360	18x14	502	24x18	901
10x 8	198	14x10	320	18x12	446	24x16	838
10x 6	169	14x 8	288	18x10	405	24x14	764
10x 4	146	14x 6	256	20x18	776	30x24	1398
12x10	261	16x14	461	20x16	711	36x30	2264
12x 8	231	16x12	405	20x14	638	.....	....

Increasers

4x 6	104	6x 8	150	8x10	201	12x14	378
4x 8	132	6x10	180	8x12	240	.....	....
4x10	162	6x12	218	10x12	267	.....	....

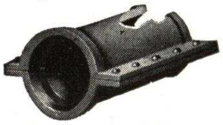
Split Tees



With any size outlet.

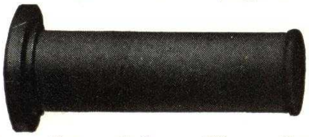
Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	60	6	115	10	245
4	103	8	165	12	275

Split Sleeves



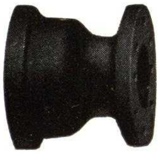
3	50	6	101	10	225
4	91	8	151	12	250

Flanges and Spigots



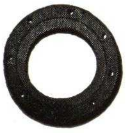
Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
3	16	24	10	18	140	18	20	340
4	16	38	12	18	173	20	20	425
6	16	60	14	18	220	24	24	635
8	16	90	16	20	255	..	..	...

Flanges and Bells



Size In.	Lgth. In.	Wt. Lbs.	Size In.	Lgth. In.	Wt. Lbs.
3	4	24	14	6	220
4	4	38	16	6	275
6	4	60	18	6	325
8	4	90	20	6	395
10	6	140	24	6	520
12	6	173	..	.	...

Flanges



Size In.	Wt. Lbs.	Size In.	Wt. Lbs.	Size In.	Wt. Lbs.
3	10	10	45	18	117
4	15	12	59	20	153
6	20	14	80	24	210
8	32	16	105	..	...

National Copper-Steel Pipe

National Copper-Steel Pipe is desirable for all places where piping is exposed to atmospheric conditions. It is particularly beneficial for use as soil, waste, vent lines and rain leaders on buildings, sprinkler lines, greenhouse piping, overhead irrigation systems, for exposed handrails, for all exposed piping on locomotives and cars, and for railway signal work including signal poles, tickler and semaphore poles, pipe on bridges, flag poles, electric light and power poles, steel towers and similarly exposed equipment.

The life of pipe in all of these services can be greatly increased by the use of copper-steel. While it is customary with some of the above uses to paint the pipe as a means of protection, even here copper-steel is of considerable value. Paints have a limited life and frequently due to pin holes and flaking, the metal is exposed in spots to the raw atmosphere and corrosion takes place. Furthermore, paint seems to adhere better to copper-steel probably because there is less tendency to corrosion of the copper-steel base metal under the paint film.

Considering the fact that the protection offered by copper-steel is a part of the pipe itself and causes no inconvenience or extra work after installation, makes the use of this product an ideal method of minimizing losses from atmospheric corrosion. It is particularly interesting to note that the saving secured through increased life of pipe is far in excess of the small additional cost involved.

The increasing number of specifications for National Copper-Steel Pipe by architects and engineers throughout the country indicate the wide acceptance of this product which is now considered standard by many consumers.

National Copper-Steel Pipe is the same high-grade steel pipe consumers have been using for many years, with the addition of a small percentage of pure copper, which thoroughly alloys with the highly refined steel, making it more resistant to corrosion. The physical properties of the pipe for ordinary purposes are not materially changed; it has the same good threading, bending and flanging properties; the smaller sizes have the advantages of the Spellerizing and Scale Free Processes; the same excellent welding properties that have made National Pipe preferred for autogenous and other types of welding are maintained; in short, all the well-known advantages of National Pipe are available in National Copper-Steel Pipe with the additional protection offered by the copper alloy.

For Identification

Black Pipe

All sizes 1¼-inch (1.660 inch O.D.) and smaller are colored by a coat of green paint on the entire outside surface. The larger sizes are marked with two stripes of green paint running lengthwise and diametrically opposite each other.

Galvanized Pipe

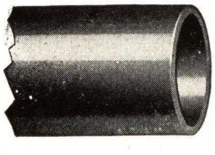
All sizes have two stripes of green running lengthwise and diametrically opposite each other.

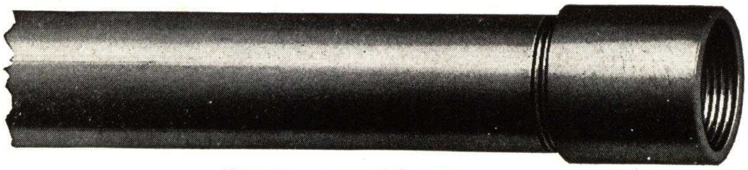
National Copper-Steel Pipe is made in the same weights and sizes as National Standard Steel Pipe.

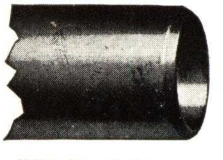
Sold from Standard Pipe List

Black or Galvanized Pipe

Steel or Copper Bearing Steel
Lap-Weld, Butt-Weld or Seamless


With Plain Ends


With Threads and Couplings


With Beveled Ends

Standard

All Weights and Dimensions are Nominal

Size Inches	Black per Foot	Diameter, Inches External	Diameter, Inches Internal	Thickness Inches	Wt., Lb., per Ft. Plain End	Wt., Lb., per Ft. Threaded and Coupled	No. of Threads per Inch
1/8	....	.405	.269	.068	.24	.24	27
1/4	....	.540	.364	.088	.42	.42	18
3/8	....	.675	.493	.091	.57	.57	18
1/2	....	.840	.622	.109	.85	.85	14
3/4	....	1.050	.824	.113	1.13	1.13	14
1	....	1.315	1.049	.133	1.68	1.68	11½
1¼	....	1.660	1.380	.140	2.27	2.28	11½
1½	....	1.900	1.610	.145	2.72	2.73	11½
2	....	2.375	2.067	.154	3.65	3.68	11½
2½	....	2.875	2.469	.203	5.79	5.82	8
3	....	3.500	3.068	.216	7.58	7.62	8
3½	....	4.	3.548	.226	9.11	9.20	8
4	....	4.500	4.026	.237	10.79	10.89	8
5	....	5.563	5.047	.258	14.62	14.81	8
6	....	6.625	6.065	.280	18.97	19.18	8

Pipe in Sizes Larger Than 6-Inch is Available as Line Pipe

The permissible variation in weight is 5 per cent above and 5 per cent below.

Average Number of Feet and Weight per Bundle

Size.......inches	1/8	1/4	3/8	1/2	3/4	1	1¼	1½
Pieces..........	30	24	18	12	7	5	3	3
Feet............	600	480	360	252	147	105	63	63
Weight....pounds	144	202	202	214	166	176	144	172

Trade Customs of Standard

Furnished with threads and couplings in random lengths, also in uniform overall lengths of 21 feet, plus or minus 1 inch.

Plain ends or beveled ends for welding either 30° or with ends fitted especially for a specified coupler can be furnished.

Taper of threads is ¾-inch per foot for all sizes.

Weight per foot of pipe with threads and couplings is based on a length of 20 feet overall, when coupling is pulled tight, but shipping lengths of small sizes will usually average less than 20 feet.

For pipe smoothed on the inside, known as reamed and drifted, an extra charge will be made above standard pipe.

On orders calling for commercial sizes of pipe which are finished with threads and couplings, in sizes ⅛ to 12-inch inclusive, and where orders specify quantity in linear feet, it is understood that random lengths fitted with threads both ends and coupling one end will be supplied and the measurement is charged overall, including coupling.

If cut lengths of any sizes are ordered, instructions must appear on the face of the order whether plain ends, threads only or threads and couplings are required. The pipe proper is cut to the length specified for plain ends or threads only, and if cut lengths with threads and couplings are specified, the practice is the same except that the couplings are charged separately whether shipped loose or screwed on the pipe.

Extra Strong

All Weights and Dimensions are Nominal

Size Inches	Black per Foot	Diameter, Inches External	Diameter, Inches Internal	Thickness Inches	Weight Pounds per Foot Plain Ends
1/8	....	.405	.215	.095	.31
1/4	....	.540	.302	.119	.54
3/8	....	.675	.423	.126	.74
1/2	....	.840	.546	.147	1.09
3/4	....	1.050	.742	.154	1.47
1	....	1.315	.957	.179	2.17
1¼	....	1.660	1.278	.191	3.00
1½	....	1.900	1.500	.200	3.63
2	....	2.375	1.939	.218	5.04
2½	....	2.875	2.323	.276	7.66
3	....	3.500	2.900	.300	10.25
3½	....	4.000	3.364	.318	12.51
4	....	4.500	3.826	.337	14.98
5	....	5.563	4.813	.375	20.78
6	....	6.625	5.761	.432	28.57
8	....	8.625	7.625	.500	43.39
10	....	10.750	9.750	.500	54.74
12	....	12.750	11.750	.500	65.42

Permissible variation in wt. is 5 per cent above or below.

Average Number of Feet and Weight per Bundle

Size.......inches	1/8	1/4	3/8	1/2	3/4	1	1¼	1½
Pieces..........	30	24	18	12	7	5	3	3
Feet............	600	480	360	252	147	105	63	63
Weight...pounds	186	254	263	272	216	228	188	229

Double Extra Strong

All Weights and Dimensions are Nominal

Size Inches	Black per Foot	Diameter, Inches External	Diameter, Inches Internal	Thickness Inches	Weight Pounds per Foot Plain Ends
1/2	....	.840	.252	.294	1.71
3/4	....	1.050	.434	.308	2.44
1	....	1.315	.599	.358	3.66
1¼	....	1.660	.896	.382	5.21
1½	....	1.900	1.100	.400	6.41
2	....	2.375	1.503	.436	9.03
2½	....	2.875	1.771	.552	13.70
3	....	3.500	2.300	.600	18.58
4	....	4.500	3.152	.674	27.54
5	....	5.563	4.063	.750	38.55
6	....	6.625	4.897	.864	53.16
8	....	8.625	6.875	.875	72.42

Permissible variation in wt. is 10 per cent above or below.

Average Number of Feet and Weight per Bundle

Size....................inches	1/2	3/4	1	1¼	1½
Pieces.....................	7	5	3	3	3
Feet.......................	140	100	60	60	60
Weight..............pounds	240	244	220	313	384

Trade Customs of Extra Strong and Double Extra Strong

Furnished with plain ends and in random lengths. When specified, can be furnished in uniform lengths of 21 feet, plus or minus 1 inch, at no extra cost.

Beveled ends for welding either 30° or with ends fitted especially for a specified coupler can be furnished.

For pipe fitted with threads only or with threads and couplings, an extra charge will be made above plain ends.

Random length of extra strong and double extra strong pipe is considered to be 12 feet to 22 feet, we to have the privilege, however, of supplying not exceeding 5 per cent of total order in lengths from 6 to 12 feet.

For cut lengths, an extra charge will be made above random.
For galvanized, coated, or copper bearing steel pipe, an extra charge will be made above black.
Seamless or copper bearing steel pipe available in all of the above weights and dimensions.

Large O.D. Steel Pipe

Plain Ends

All Weights and Dimensions are Nominal

O.D. In.	Wall Thickness, Inches ¼ Wt. Lb. per Ft.	5/16 Wt. Lb. per Ft.	⅜ Wt. Lb. per Ft.	7/16 Wt. Lb. per Ft.	½ Wt. Lb. per Ft.
14	36.71	45.68	54.57	63.37	72.09
16	42.05	52.36	62.58	72.72	82.77
18	47.39	59.03	70.59	82.06	93.45
20	52.73	65.71	78.60	91.41	104.13
22	.....	72.38	86.61	100.75	114.81
24	.....	79.06	94.62	110.10	125.49

O.D. In.	Wall Thickness, Inches 9/16 Wt. Lb. per Ft.	⅝ Wt. Lb. per Ft.	11/16 Wt. Lb. per Ft.	¾ Wt. Lb. per Ft.	⅞ Wt. Lb. per Ft.
14	80.73	89.28	97.75	106.13	122.65
16	92.74	102.63	112.43	122.15	141.35
18	104.76	115.98	127.12	138.17	160.04
20	116.77	129.33	141.80	154.19	178.73
22	128.79	142.68	156.49	170.22	......
24	140.80	156.03	171.17	186.24	......

The permissible variation in weight is 10 per cent above or 10 per cent below.

Pipe will be shipped in random lengths, plain ends, unless otherwise ordered.

For cut lengths, an extra charge above random will be made.

For threaded pipe an extra charge above plain end will be made.

Well Drillers Drive Pipe

The permissible variation in weight is 5 per cent above and 5 per cent below.

Furnished with threads and couplings and in random lengths of 20 feet unless otherwise ordered.

Taper of threads is ¾ inch diameter per foot length for all sizes.

The weight per foot of pipe with threads and couplings is based on a length of 20 feet, including the coupling.

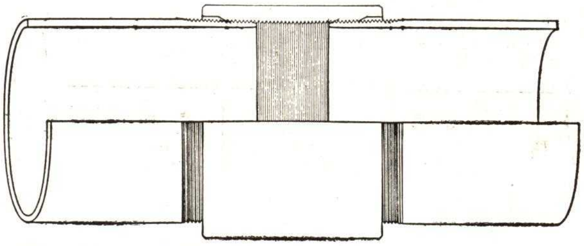
The joint is designed so the pipe will butt in the center after a certain amount of usage. Threads are cut so as to seat on a taper in the ends of the couplings which permits the joint to be easily made up below ground level and assures a strong substantial joint to resist driving stresses.

All Weights and Dimensions are Nominal

Size In.	Per Foot	Diameter, Inches External	Internal	Thick-ness In.	Weight, Lb. per Foot Plain Ends	Threads and Couplings	Threads per Inch
2	....	2.375	2.067	.154	3.65	3.68	11½
2½	....	2.875	2.469	.203	5.79	5.82	8
3	....	3.500	3.068	.216	7.58	7.62	8
3½	....	4.000	3.548	.226	9.11	9.20	8
4	....	4.500	4.026	.237	10.79	10.89	8
5	....	5.563	5.047	.258	14.62	14.81	8
6	....	6.625	6.065	.280	18.97	19.19	8
8	....	8.625	8.071	.277	24.70	25.00	8
10	....	10.750	10.192	.279	31.20	32.00	8
12	....	12.750	12.090	.330	43.77	45.00	8

National Boston Water Well Casing

For Water Wells and Irrigation Purposes



All weights and dimensions are nominal.

The permissible variation in weight is 5 per cent above and 5 per cent below.

Furnished with threads and couplings and in random lengths, unless otherwise ordered.

Taper of threads is ⅜ inch per foot measured on the diameter.

Thickness of walls makes it impracticable to cut threads of coarser pitch than shown on table.

For cut lengths, an extra charge will be made above random.

For galvanized casing, an extra charge will be made above black.

Size Outside Diameter Inches	Weight, Pounds per Foot Threads and Couplings	Plain Ends	Thick-ness Inches	Diameter, Inches External	Internal	Threads per Inch
3½	4.60	4.51	.125	3.500	3.250	14
4	5.65	5.53	.134	4.000	3.732	14
4½	6.75	6.61	.142	4.500	4.216	14
5½	9.00	8.79	.154	5.500	5.192	14
6	10.50	10.22	.164	6.000	5.672	14
6⅝	13.00	12.72	.185	6.625	6.255	11½
8⅝	17.50	16.90	.188	8.625	8.249	11½

National Reamed and Drifted Pipe

Especially adapted for water well work.

Carefully reamed and drifted. Every individual length receives the same care and treatment under conditions that fit it to give as near trouble-free service as possible.

The interior of **National** reamed and drifted pipe is clean and smooth, free from any rough spots to obstruct the action of the plunger or valve cups when the well is finished.

An economical pipe skillfully made and thoroughly tested.

All Weights and Dimensions are Nominal

Size In.	Diameter, In. Outside	Inside	Wall Thick-ness In.	Threads per Inch No.	Wt. Lb. per Ft. Thrds. and Cplg.	Cal. Plain Ends	Couplings Lgth. In.	Outside Diam. In.	Calcu-lated Wt. Lb.
1	1.315	1.049	.133	11½	1.70	1.68	2¾	1.576	.52
1¼	1.660	1.380	.140	11½	2.30	2.27	2¾	1.900	.60
1½	1.900	1.610	.145	11½	2.75	2.72	2¾	2.200	.84
2	2.375	2.067	.154	11½	3.75	3.65	3⅜	2.750	1.58
2	2.375	2.041	.167	11½	4.00	3.94	3⅜	2.750	1.58
2½	2.875	2.469	.203	8	5.90	5.79	3 15/16	3.250	2.32
3	3.500	3.068	.216	8	7.70	7.58	4 1/16	4.000	3.80
3½	4.000	3.548	.226	8	9.25	9.11	4 3/16	4.625	5.53
4	4.500	4.026	.237	8	11.00	10.79	4 5/16	5.200	7.14
5	5.563	5.047	.258	8	15.00	14.62	4½	6.296	9.57
6	6.625	6.065	.280	8	19.45	18.97	4 11/16	7.390	12.32
8	8.625	7.981	.322	8	29.35	28.55	5 1/16	9.625	22.35
10	10.750	10.020	.365	8	41.85	40.48	5 9/16	11.750	30.61
12	12.750	12.000	.375	8	51.15	49.56	5 15/16	14.000	47.96

The permissible variation in weight is 5 per cent above and 5 per cent below.

Furnished with threads and couplings and in random lengths, 16 to 22 feet, unless otherwise ordered.

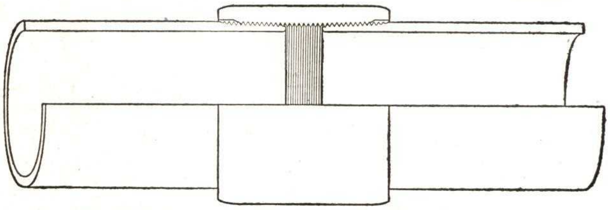
Taper of threads is ¾ inch per foot measured on the diameter.

The weight per foot of pipe with threads and couplings is based on a length of 20 feet, including the coupling, but shipping lengths of small sizes will usually average less than 20 feet. On sizes made in more than one weight, weight desired, must be specified.

For galvanized or copper-steel pipe, an extra charge will be made above black.

National Ammonia Pipe

Specially Recommended for Ammonia Purposes



All Weights and Dimensions Are Nominal

Size In.	Pipe, In. Thickness	Pipe, In. External Diam.	Pipe, In. Internal Diam.	Threads per Inch	Couplings Lgth. In.	Couplings Diam. In.	Couplings Wt. Lb.	Test Pressure Butt-Welded Lb. per Sq. In.	Test Pressure Grade A Seamless Lb. per Sq. In.	Wt., Lb. per Foot Threads and Couplings	Wt., Lb. per Foot Plain Ends
3/4	.113	1.050	.824	14	2 1/8	1.313	.34	700	700	1.14	1.13
1	.133	1.315	1.049	11 1/2	2 5/8	1.576	.54	700	700	1.70	1.68
1 1/4	.140	1.660	1.380	11 1/2	2 3/4	2.054	1.03	800	1000	2.30	2.27
1 1/2	.145	1.900	1.610	11 1/2	2 3/4	2.200	.90	800	1000	2.75	2.72
2	.154	2.375	2.067	11 1/2	3 1/4	2.875	2.13	800	1000	3.75	3.65

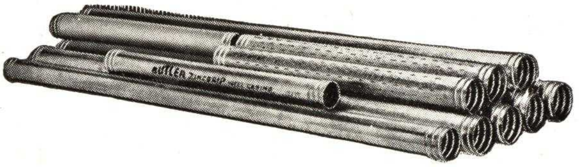
The permissible variation in weight is 5 per cent above and 5 per cent below.

Furnished with threads and couplings, Butt-Welded sizes in uniform 21-foot lengths, and Seamless sizes in random lengths, unless otherwise ordered.

The weight per foot of pipe with threads and couplings is based on a length of 20 feet, including the coupling.

All sizes are air tested under water when specified.

Butler Galvanized Well Casing



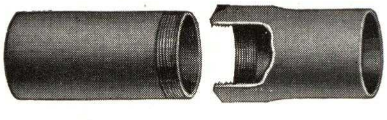
A screwjoint casing made of zincgrip steel. Matched threads are drawn deeper without risk of flaking or peeling of protecting zinc. These threads are self-locking; need no stop-thread. Available in plain or perforated style. Perforations are centered on top of embossing, with smooth, clean edges that admit more water while keeping out silt and sediment.

An adapter for joining Butler casing to old style casing is available. One end threaded for old style; other end made with Butler deep expanded threads. Furnished, one to each order, on request, at a small additional cost.

Made in 2½ and 10-foot one-piece lengths, double-lock side seam. Specify length when ordering. To allow for laps, one 2½-foot length is furnished free for each complete 100 feet ordered.

Diameter.................inches	**4**	**4½**	**5**	**5½**	**6**
22-Gage, Weight per 100 Ft....lb.	160	175	196	214	228
20-Gage, Weight per 100 Ft....lb.	194	207	228	249	276

Inserted Joint Casing



Inserted joint casing is made at the factory by enlarging one end of each length of casing and tapping a female thread, the other end is furnished with a male thread of corresponding size.

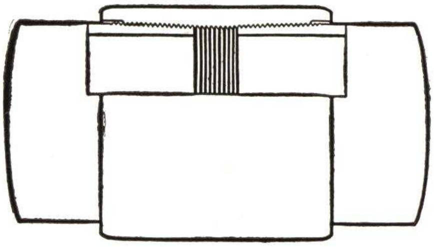
Available in all standard casing sizes.

Furnished threaded and in random lengths unless otherwise specified.

Further information furnished upon request.

Lapwelded Casing

All Weights and Dimensions are Nominal



Size O.D. In.	Size I.D. In.	Thickness In.	Approx. Wt., Lb. per Foot Plain Ends	Approx. Wt., Lb. per Foot Threads and Cplg.	Threads per Inch	Test Press. Lb. per Sq. In.
3.500	3.250	.125	4.51	4.60	14	1100
4.000	3.732	.134	5.53	5.65	14	1000
4.500	4.216	.142	6.61	6.75	14	950
5.500	5.192	.154	8.79	9.00	14	850
6.000	5.672	.164	10.22	10.50	14	850
6.625	6.255	.185	12.72	13.00	11½	850
8.625	8.249	.188	16.90	17.50	11½	650

Couplings

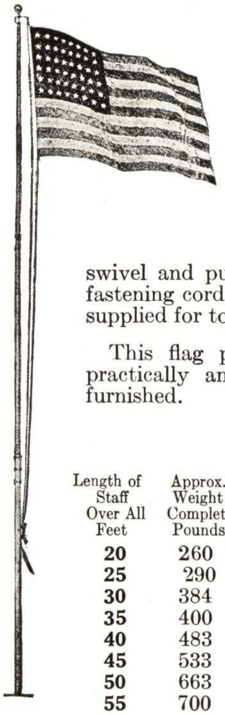
Size....inches	**3.500**	**4.000**	**4.500**	**5.500**	**6.000**	**6.625**	**8.625**
O.D....inches	4.000	4.500	5.000	6.050	6.625	7.390	9.375
Length.inches	3⅛	3⅛	3⅝	4⅛	4⅛	4⅝	5⅛
Approx.Wt.lb.	2.86	3.24	4.26	6.38	7.84	11.88	16.92

Permissible variation in weight is 5 per cent above and 5 per cent below.

Taper of threads is ⅜-inch diameter per foot length for all sizes.

Galvanized Steel Flag Poles

For parks, schools, colleges, country clubs, play grounds, public buildings, private buildings, etc.



Made from galvanized wrought steel pipe of different sizes.

Each joint is properly telescoped, strongly riveted and then caulked which reinforces the joints and also prevents water from entering the joint and causing rust. For setting in a concrete foundation or on roofs.

Fitted at top with revolving swivel and pulley. Steel cord and rope hitch for fastening cord is included. Gilded ball ornament is supplied for top.

This flag pole is attractive and durable and practically any size and length desired can be furnished.

Length of Staff Over All Feet	Approx. Weight Complete Pounds	Each	Length of Staff Over All Feet	Approx. Weight Complete Pounds	Each
20	260	......	**60**	758	......
25	290	......	**65**	820	......
30	384	......	**70**	957	......
35	400	......	**75**	1100	......
40	483	......	**80**	1182	......
45	533	......	**90**	1669	......
50	663	......	**100**	2000	......
55	700	......	...	....	......

Shipments are made in sections not to exceed 36 feet in length.

Taylor Forge Spiral Welded Pipe

Nom. I.D. In.	U.S. Std. Gage Thickness	Nominal Thickness	Hydrostatic Test Pres. Lb. per Sq. In.	Approx. Bursting Pressure 5000 Lb. Material	Approx. Wt. Lb. per Lineal Foot	Plain End per Lineal Foot
4	14	.0747	792	1800	4.1	**$.36**
5	14	.0747	638	1450	5.0	**.45**
6	14	.0747	524	1193	6.0	**.54**
6	12	.1046	734	1669	8.2	**.76**
6	10	.1345	944	2145	10.5	**.97**
*** 6⅝**	14	.0747	496	1130	6.4	**.57**
*** 6⅝**	12	.1046	695	1580	8.8	**.81**
*** 6⅝**	10	.1345	894	2030	11.2	**1.03**
8	14	.0747	398	903	7.8	**.71**
8	12	.1046	557	1265	11.0	**.99**
8	10	.1345	716	1627	14.0	**1.27**
*** 8⅝**	14	.0747	382	867	8.2	**.74**
*** 8⅝**	12	.1046	534	1213	11.6	**1.04**
*** 8⅝**	10	.1345	686	1559	14.7	**1.33**
10	14	.0747	320	728	9.7	**.89**
10	12	.1046	448	1019	13.6	**1.24**
10	10	.1345	576	1310	17.5	**1.59**
10	8	.1644	704	1601	21.5	**2.10**
***10¾**	14	.0747	306	695	10.2	**.93**
***10¾**	12	.1046	428	973	14.3	**1.30**
***10¾**	10	.1345	551	1251	18.4	**1.67**
***10¾**	8	.1644	674	1530	22.6	**2.20**
12	14	.0747	268	610	11.7	**1.05**
12	12	.1046	375	853	16.3	**1.47**
12	10	.1345	482	1096	21.0	**1.89**
12	8	.1644	590	1340	25.6	**2.30**
***12¾**	14	.0747	258	586	12.2	**1.09**
***12¾**	12	.1046	361	820	17.0	**1.53**
***12¾**	10	.1345	464	1055	21.9	**1.97**
***12¾**	8	.1644	568	1290	26.7	**2.40**
***14**	14	.0747	235	534	13.4	**1.14**
***14**	12	.1046	329	747	18.8	**1.59**
***14**	10	.1345	423	961	24.1	**2.04**
***14**	8	.1644	517	1172	29.5	**2.49**
14	14	.0747	231	563	13.6	**1.16**
14	12	.1046	323	733	19.1	**1.62**
14	10	.1345	415	943	24.5	**2.08**
14	8	.1644	507	1152	30.0	**2.53**
***16**	14	.0747	206	467	15.4	**1.30**
***16**	12	.1046	288	654	21.5	**1.82**
***16**	10	.1345	370	841	27.6	**2.34**
***16**	8	.1644	453	1028	33.7	**2.85**
16	14	.0747	202	459	15.6	**1.32**
16	12	.1046	283	643	21.8	**1.85**
16	10	.1345	364	827	28.0	**2.38**
16	8	.1644	445	1011	34.2	**2.90**
***18**	14	.0747	183	415	16.8	**1.47**
***18**	12	.1046	256	581	23.5	**2.06**
***18**	10	.1345	329	748	30.2	**2.64**
***18**	8	.1644	402	914	36.9	**3.22**
18	14	.0747	180	410	17.0	**1.49**
18	12	.1046	252	573	23.8	**2.09**
18	10	.1345	324	736	30.6	**2.68**
18	8	.1644	396	900	37.4	**3.27**
***20**	14	.0747	164	374	18.8	**1.64**
***20**	12	.1046	230	523	26.2	**2.29**
***20**	10	.1345	296	672	33.6	**2.94**
***20**	8	.1644	362	822	41.1	**3.58**
20	14	.0747	162	368	19.0	**1.66**
20	12	.1046	227	516	26.5	**2.32**
20	10	.1345	292	664	34.0	**2.98**
20	8	.1644	357	811	41.6	**3.63**
***22**	14	.0747	150	340	20.6	**1.80**
***22**	12	.1046	210	475	28.8	**2.52**
***22**	10	.1345	270	612	37.0	**3.24**
***22**	8	.1644	330	748	45.2	**3.95**
22	14	.0747	148	336	20.8	**1.82**
22	12	.1046	207	470	29.1	**2.55**
22	10	.1345	266	604	37.4	**3.28**
22	8	.1644	325	738	45.7	**4.00**

Also available in sizes 24 O. D., 24, 26, 28 and 30 I. D.

Regularly furnished steel but available in other weldable materials conforming with standard A.S.T.M. specifications.

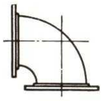
Prices apply on pipe furnished plain end in standard uniform lengths of 20, 30 or 40 feet, mill coated on the outside only.

*Outside diameter.

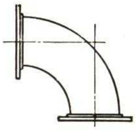
Taylor Forge Welded Steel Flanged Fittings

For Lightweight Spiral Pipe

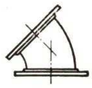
No. 10 Gage Thickness (.1406 Inch)



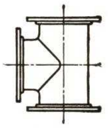
90° Elbow



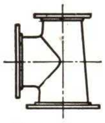
90° Long Radius Elbow



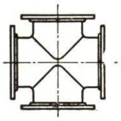
45° Elbow



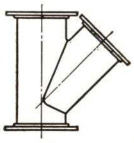
Tee



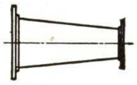
Reducing Tee



Cross



Lateral



Reducer

With Taylor Standard Flanges Attached

Nom. I.D. In.	90° Elbows Black Each	90° Elbows Galv. Each	90° Long Radius Elbows Black Each	90° Long Radius Elbows Galv. Each	45° Elbows Black Each	45° Elbows Galv. Each	Tees Black Each	Tees Galv. Each
3	$6.00	$6.80	.....	.....	$6.00	$6.80	$8.70	$10.90
4	8.00	9.00	.....	.....	8.00	9.00	10.10	13.00
5	9.00	10.60	.....	.....	9.00	10.60	11.80	14.60
6	10.00	11.90	$13.50	$15.90	10.00	11.90	13.00	16.00
8	13.00	15.80	18.00	21.50	13.00	15.80	17.00	20.00
10	20.00	24.00	26.00	31.00	20.00	24.00	25.00	30.00
12	24.00	29.00	33.00	39.20	24.00	29.00	29.00	35.00
14	32.00	39.00	43.00	52.00	32.00	39.00	41.00	50.00
16	44.00	54.00	55.00	70.00	44.00	54.00	71.00	86.00
18	79.00	97.00	90.00	110.00	61.00	75.00	97.00	118.00
20	90.00	108.00	100.00	125.00	70.00	85.00	108.00	130.00
22	100.00	125.00	115.00	140.00	80.00	98.00	125.00	150.00
24	120.00	145.00	135.00	160.00	90.00	110.00	142.00	175.00

With Flanges of American Standard Diameter and Drilling Attached

3	$7.00	$8.40	......	......	$7.00	$8.40	$10.20	$13.30
4	9.00	10.70	......	......	9.00	10.70	11.60	15.50
5	11.00	13.40	......	......	11.00	13.40	14.80	17.30
6	12.00	14.60	$15.50	$19.00	12.00	14.60	16.00	20.00
8	16.00	20.40	21.00	26.00	16.00	20.40	21.50	27.00
10	24.00	30.00	30.00	37.00	24.00	30.00	29.50	39.00
12	30.00	39.00	39.00	49.00	30.00	39.00	38.00	50.00
14	38.00	49.00	49.00	62.00	38.00	49.00	50.00	65.00
16	50.00	64.00	61.00	80.00	50.00	64.00	80.00	101.00
18	86.00	108.00	97.00	121.00	86.00	108.00	110.00	135.00
20	97.00	119.00	107.00	137.00	97.00	119.00	121.00	147.00
22	108.00	137.00	123.00	152.00	108.00	137.00	138.00	168.00
24	128.00	157.00	143.00	172.00	128.00	157.00	155.00	193.00

All fittings sizes 16-inch and smaller are made from No. 10 gage steel material. Sizes 18-inch and larger furnished of a thickness suitable for specific working requirements. Elbows, sizes 16-inch and smaller (14-inch and smaller in long radius type), are made in two halves with two longitudinal welds; sizes 18-inch and larger are of segmentally welded construction, the 90 degree elbows being made with five segments and the 45 degree elbows with three segments.

Center to face dimensions of all fittings are the same as the 125-pound American Standard for cast iron.

For reducing tees, crosses, laterals and reducers, prices upon application.

Pipe Nipples

Close Nipple
No. 702

Short Nipple
No. 703

Long Nipple
No. 704

***Tank Nipple**
No. 705

Standard Black Right-Hand Nipples—Each

Diam. In.	Length Inches		Close	Short	Long Length, Inches														
	Close	Short			2	2½	3	3½	4	4½	5	5½	*6	7	8	9	10	11	12
⅛	¾	1½	$.05	$.06	$.07	$.08	$.08	$.09	$.09	$.10	$.11	$.12	$.13	$.14	$.15	$.16	$.17	$.18	$.20
¼	⅞	1½	.05	.06	.07	.08	.08	.09	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.20
⅜	1	1½	.05	.06	.07	.08	.08	.09	.09	.10	.11	.12	.13	.14	.15	.16	.17	.18	.20
½	1⅛	1½	.06	.07	.08	.09	.09	.10	.10	.11	.12	.13	.14	.15	.17	.19	.21	.23	.25
¾	1⅜	2	.08	.09	....	.10	.11	.12	.13	.14	.15	.16	.17	.19	.21	.23	.25	.27	.29
1	1½	2	.10	.11	....	.13	.14	.15	.16	.17	.18	.19	.20	.24	.27	.30	.32	.35	.38
1¼	1⅝	2½	.13	.15	....	....	.16	.18	.20	.22	.24	.26	.28	.32	.36	.40	.44	.48	.52
1½	1¾	2½	.16	.18	....	....	.20	.22	.25	.27	.29	.31	.34	.38	.43	.47	.52	.56	.60
2	2	2½	.21	.24	....	....	.28	.31	.34	.37	.40	.44	.48	.53	.59	.66	.78	.80	.87
2½	2½	3	.39	.45	....	....	....	.58	.63	.68	.73	.78	.85	.94	1.03	1.12	1.22	1.31	1.40
3	2⅝	3	.54	.59	....	....	...	.65	.73	.81	.89	.96	1.04	1.19	1.34	1.50	1.65	1.80	1.95
3½	2¾	4	.72	.98	....	....	....	....	....	1.06	1.14	1.21	1.29	1.45	1.61	1.76	1.92	2.08	2.24
4	2⅞	4	.92	1.12	....	..	....	....	....	1.28	1.38	1.48	1.60	1.80	2.00	2.20	2.40	2.60	2.80
5	3	4½	1.60	2.00	....	. .	....	....	....	....	2.05	2.17	2.29	2.61	2.91	3.15	3.39	3.64	3.88
6	3⅛	4½	2.00	2.45	...	..	....	....	....	....	2.58	2.73	2.90	3.36	3.68	4.08	4.31	4.60	4.94
8	3½	5	4.30	4.87	....	....	....	....	....	....	....	5.00	5.44	5.71	6.10	6.48	6.85	7.25	7.65
10	3⅞	5	5.38	6.50	....	....	....	....	....	....	....	....	....	....	8.00	8.55	9.10	9.65	10.20
12	4½	6	7.40	8.70	....	....	....	....	....	....	....	....	....	....	10.00	10.90	11.80	12.70	13.60

Standard Galvanized Right Hand Nipples—Each

Diam. In.	Length Inches		Close	Short	Long Length, Inches														
	Close	Short			2	2½	3	3½	4	4½	5	5½	*6	7	8	9	10	11	12
⅛	¾	1½	$.07	$.08	$.10	$.11	$.12	$.13	$.14	$.15	$.16	$.17	$.19	$.22	$.25	$.28	$.30	$.33	$.36
¼	⅞	1½	.07	.08	.10	.11	.12	.13	.14	.15	.16	.17	.19	.22	.25	.28	.30	.33	.36
⅜	1	1½	.07	.08	.10	.11	.12	.13	.14	.15	.16	.17	.19	.22	.25	. 28	.30	.33	.36
½	1⅛	1½	.08	.09	.11	.12	.13	.14	.15	.16	.17	.18	.20	.23	.26	.29	.32	.35	.38
¾	1⅜	2	.10	.12	....	.13	.14	.16	.18	.20	.22	.24	.26	.29	.32	.35	.39	.42	.45
1	1½	2	.13	.15	....	.18	.20	.22	.24	.26	.28	.30	.34	.38	.42	.46	.50	.54	.58
1¼	1⅝	2½	.17	.22	....	....	.26	.28	.30	.34	.37	.40	.44	.48	.56	.62	.68	.74	.80
1½	1¾	2½	.22	.26	....	....	.30	.34	.38	.42	.45	.48	.52	.58	.65	.73	.80	.87	.94
2	2	2½	.30	.35	....	....	.40	.45	.50	.55	.60	.65	.70	.79	.88	.97	1.06	1.15	1.24
2½	2½	3	.60	.66	....	....	....	.75	.83	.90	.98	1.06	1.14	1.28	1.44	1.60	1.76	1.92	2.08
3	2⅝	3	.80	.87	....	....	....	1.01	1.10	1.20	1.30	1.40	1.50	1.70	1.90	2.10	2.30	2.50	2.70
3½	2¾	4	1.15	1.40	....	....	....	....	....	1.53	1.65	1.78	1.91	2.16	2.41	2.66	2.91	3.16	3.41
4	2⅞	4	1.27	1.60	....	....	....	....	....	1.85	2.00	2.15	2.30	2.60	2.90	3.20	3.50	3.80	4.10
5	3	4½	2.29	2.87	....	....	....	....	....	....	3.01	3.21	3.40	3.95	4.35	4.73	5.12	5.52	5.90
6	3⅛	4½	2.86	3.56	....	....	....	....	....	....	3.79	4.03	4.30	5.00	5.52	6.03	6.53	7.05	7.54
8	3½	5	5.52	6.37	....	....	....	....	....	....	...	6.65	6.95	7.55	8.15	8.75	9.35	9.95	10.60

Nipples made from copper bearing pipe, prices upon application.

The prices given above apply to wrought steel close, short, and long nipples, and to tank nipples, made from **Standard Weight Pipe.**

For prices of galvanized nipples made from **Extra Strong Pipe,** add the prices of standard black nipples and standard galvanized nipples.

For prices of black nipples made from **Double Extra Strong Pipe,** multiply by 4, the price of the standard black nipples.

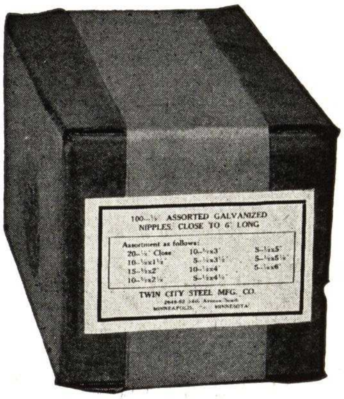
Standard or extra strong seamless steel nipples use the same prices as standard or extra strong nipples made from welded steel pipe, but are sold at an advance in price. Prices upon application.

For price on **Butt Nipples,** add 20 per cent to price of short nipples.

For list of lengths not listed (under 12 inches) use list of next longer length. For list of length 12 to 24 inches, add prices of the two nearest equal lengths.

***Tank Nipples** are 6 inches long and use the prices of the 6-inch length. Has a standard taper pipe thread on one end; the other end has a standard taper pipe thread running into an AmericanStandard locknut thread for a total thread length of 4 inches.

Twin City Steel Nipples



Black nipples are packed in boxes with pink labels. Galvanized nipples are packed in boxes with blue labels. ¼, ⅜, ½ and ¾-inch sizes assorted close to 6 inches long are packed 100 in a carton as follows.

No. of Nipples	Size Inches	No. of Nipples	Size Inches	No. of Nipples	Size Inches
20	¼ Close	10	¼x3	5	¼x5
10	¼x1½	5	¼x3½	5	¼x5½
15	¼x2	10	¼x4	5	¼x6
10	¼x2½	5	¼x4½	.	......

1-inch size, assorted close to 6 inches long are packed 75 in a carton as follows:

15	1 Close	5	1x3½	5	1x5½
10	1x2	5	1x4	5	1x6
10	1x2½	5	1x4½	.	...
10	1x3	5	1x5	.	...

Prices upon application.

Walworth Malleable Iron Heavy Couplings

Wrought Iron Type—Plain Right Hand

Size Inches	No. 7136 Black Each	No. 7536 Galvanized Each
⅛	$.06	$.08
¼	.06	.08
⅜	.06	.08
½	.07	.10
¾	.10	.13
1	.13	.18
1¼	.17	.25
1½	.21	.32
2	.28	.40
2½	.40	.55
3	.60	.80

A malleable iron coupling similar in appearance to a wrought iron coupling.

Tapped right-hand straight through.

Walworth Extra Heavy Recessed Couplings

For Line Pipe

Recessed at both ends and tapped straight through. R.H. thread.

	Each					Each			
Size In.	No. 7225 Black	No. 7625 Galv.	No. 7226 R & L Black	No. 7626 R & L Galv.	Size In.	No. 7225 Black	No. 7625 Galv.	No. 7226 R & L Black	No. 7626 R & L Galv.
¼	$.10	$.14	$.15	$.21	1¼	$.25	$.37	$.38	$.53
⅜	.10	.14	.15	.21	1½	.30	.46	.45	.63
½	.10	.14	.15	.21	2	.40	.57	.70	.98
¾	.12	.16	.18	.25	2½	.60	.85	1.20	1.70
1	.15	.21	.23	.31	3	.80	1.15	1.60	2.25

Walworth Wrought Couplings

Standard **Heavy Recessed**

Size In.	No. R6917 Black R.H. Each	No. R6918 Galv. R.H. Each	Size In.	No. R6920 Black R.H. Each	No. R6921 Galv. R.H. Each
⅛	$.09	$.11	⅛	$.32	$.40
¼	.10	.12	¼	.34	.43
⅜	.11	.14	⅜	.35	.44
½	.12	.15	½	.36	.45
¾	.15	.19	¾	.40	.50
1	.29	.36	1	.60	.75
1¼	.32	.40	1¼	.65	.80
1½	.36	.45	1½	.70	.90
2	.60	.75	2	.90	1.15
2½	.75	.95	2½	1.85	2.30
3	1.05	1.30	3	2.65	3.30
3½	1.50	1.85	3½	3.10	3.90
4	1.95	2.45	4	3.60	4.50
5	2.90	3.65	5	4.10	5.05
6	3.00	3.75	6	4.20	5.25
8	5.85	7.30	8	10.80	13.50
10	13.05	16.30	10	18.45	23.00
12	23.70	29.60	12	27.00	33.75

Walworth Malleable Iron-Faced Locknuts and Couplings

Faced Locknut

Faced Coupling

Malleable Iron Faced Locknuts

Size In.	No. 7179 Black Each	No. 7579 Galv. Each	Size In.	No. 7179 Black Each	No. 7579 Galv. Each	Size In.	No. 7179 Black Each	No. 7579 Galv. Each
¼	$.08	$.11	1	$.15	$.22	2½	$.35	$.50
⅜	.09	.13	1¼	.20	.30	3	.45	.65
½	.10	.15	1½	.25	.35	...	...	...
¾	.12	.18	2	.30	.45	...	...	...

Malleable Iron Faced Couplings

Size In.	No. 7180 Black Each	No. 7580 Galv. Each	Size In.	No. 7180 Black Each	No. 7580 Galv. Each	Size In.	No. 7180 Black Each	No. 7580 Galv. Each
¼	$.09	$.14	1¼	$.30	$.45	3½	$1.20	$1.80
⅜	.10	.15	1½	.40	.60	4	1.50	2.25
½	.12	.18	2	.50	.75	...	....	....
¾	.16	.24	2½	.70	1.00	...	....	....
1	.22	.33	3	.90	1.35	...	....	....

Style 38 Dresser Steel Pipe Couplings

For Steel Pipe Sizes ⅜-Inch I.D. to 24-Inch O.D. and Larger

Resilient gasket seal. Makes a permanently tight, flexible connection between sections of plain-end pipe.

For high and low pressures, on gas, water, air, oil and sewage lines.

Coupling is made up of middle ring, two followers, two resilient gaskets and a number of bolts. All metal parts are steel.

Regular and special sizes supplied. Also CIP and light wall pipe sizes.

Gaskets are supplied in accordance with service (gas, water, oil, etc.). Specify service when ordering.

Further information and prices upon application.

Walworth Standard 150-Pound Malleable Iron Fittings

Flat Band 90° Elbows

Size Inches	No. 7103 Black Each	No. 7503 Galv. Each
⅛	$.06	$.08
¼	.06	.08
⅜	.06	.08
½	.07	.09
¾	.10	.13
1	.13	.17
1¼	.20	.26
1½	.25	.33
2	.40	.52
2½	.72	.95
3	1.00	1.30
3½	1.50	1.95
4	1.80	2.35
5	3.25	4.25
6	4.65	6.05

Flat Band 90° Reducing Elbows

Size Inches	No. 7104 Black Each	No. 7504 Galv. Each
¼x ⅛	$.07	$.09
⅜x ⅛	.07	.09
⅜x ¼	.07	.09
½x ¼	.08	.10
½x ⅜	.08	.10
¾x ¼	.11	.14
¾x ⅜	.11	.14
¾x ½	.11	.14
1 x ⅜	.14	.18
1 x ½	.14	.18
1 x ¾	.14	.18
1¼x ½	.22	.29
1¼x ¾	.22	.29
1¼x1	.22	.29
1½x ¾	.28	.36
1½x1	.28	.36
1½x1¼	.28	.36
2 x ¾	.44	.57
2 x1	.44	.57
2 x1¼	.44	.57
2 x1½	.44	.57
2½x1½	.80	1.05
2½x2	.80	1.05
3 x2	1.10	1.45
3 x2½	1.10	1.45
4 x3	2.00	2.60

Flat Band 45° Elbows

Size Inches	No. 7106 Black Each	No. 7506 Galv. Each
⅛	$.07	$.09
¼	.07	.09
⅜	.07	.09
½	.09	.12
¾	.12	.16
1	.16	.21
1¼	.24	.31
1½	.30	.39
2	.48	.62
2½	.86	1.10
3	1.20	1.55
3½	1.80	2.35
4	2.20	2.85
5	3.90	5.10
6	5.60	7.30

Flat Band 45° Street Elbows

Size Inches	No. 7110 Black Each	No. 7510 Galv. Each
⅛	$.08	$.10
¼	.08	.10
⅜	.08	.10
½	.10	.13
¾	.14	.18
1	.18	.23
1¼	.28	.36
1½	.35	.46
2	.55	.72

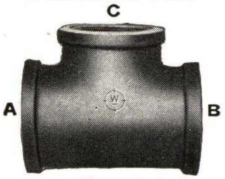
Flat Band 90° Street Elbows

Size Inches	No. 7108 Black Each	No. 7508 Galv. Each
⅛	$.07	$.09
¼	.07	.09
⅜	.07	.09
½	.08	.10
¾	.12	.16
1	.15	.20
1¼	.23	.30
1½	.29	.38
2	.46	.60
2½	.83	1.10
3	1.15	1.50
4	2.10	2.75

Flat Band 90° Reducing Street Elbows

Size Inches	No. 7109 Black Each	No. 7509 Galv. Each
½x ⅜	$.10	$.13
¾x ½	.13	.17
1 x ¾	.17	.22
1¼x ¾	.25	.33
1¼x1	.25	.33
1½x ¾	.32	.42
1½x1	.32	.42
1½x1¼	.32	.42
2 x1½	.51	.66

Flat Band Tees



Size Inches	No. 7117 Black Each	No. 7517 Galv. Each
⅛	$.08	$.10
¼	.08	.10
⅜	.08	.10
½	.10	.13
¾	.13	.17
1	.17	.22
1¼	.26	.34
1½	.33	.43
2	.52	.68
2½	.90	1.20
3	1.30	1.70
3½	2.00	2.60
4	2.40	3.10
5	4.25	5.55
6	6.00	7.80

Walworth Standard 150-Pound Malleable Iron Fittings

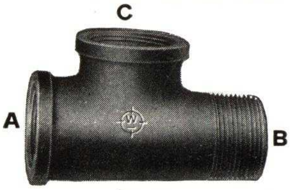
Flat Band Reducing Tees

Size, Inches A B C	No. 7118 Black Each	No. 7518 Galv. Each
⅛x ⅛x ¼	$.09	$.12
¼x ¼x ⅛	.09	.12
¼x ¼x ⅜	.09	.12
⅜x ¼x ¼	.09	.12
⅜x ¼x ⅜	.09	.12
⅜x ⅜x ¼	.09	.12
⅜x ⅜x ½	.11	.14
½x ¼x ½	.11	.14
½x ⅜x ⅜	.11	.14
½x ⅜x ½	.11	.14
½x ½x ¼	.11	.14
½x ½x ⅜	.11	.14
½x ½x ¾	.15	.20
¾x ¼x ¾	.15	.20
¾x ⅜x ⅜	.15	.20
¾x ⅜x ¾	.15	.20
¾x ½x ½	.15	.20
¾x ½x ¾	.15	.20
¾x ¾x ¼	.15	.20
¾x ¾x ⅜	.15	.20
¾x ¾x ½	.15	.20
½x ½x1	.19	.25
¾x ¾x1	.19	.25
1 x ½x ½	.19	.25
1 x ½x ¾	.19	.25
1 x ½x1	.19	.25
1 x ¾x ½	.19	.25
1 x ¾x ¾	.19	.25
1 x ¾x1	.19	.25
1 x1 x ¼	.19	.25
1 x1 x ⅜	.19	.25
1 x1 x ½	.19	.25
1 x1 x ¾	.19	.25
¾x ¾x1¼	.29	.38
1 x1 x1¼	.29	.38
1¼x ½x1	.29	.38
1¼x ½x1¼	.29	.38
1¼x ¾x ¾	.29	.38
1¼x ¾x1	.29	.38
1¼x ¾x1¼	.29	.38
1¼x1 x ½	.29	.38
1¼x1 x ¾	.29	.38
1¼x1 x1	.29	.38
1¼x1 x1¼	.29	.38
1¼x1¼x ⅜	.29	.38
1¼x1¼x ½	.29	.38
1¼x1¼x ¾	.29	.38
1¼x1¼x1	.29	.38
1 x1 x1½	.37	.48
1¼x1¼x1½	.37	.48
1½x ½x1½	.37	.48
1½x ¾x1½	.37	.48
1½x1 x1	.37	.48
1½x1 x1¼	.37	.48
1½x1 x1½	.37	.48
1½x1¼x ½	.37	.48
1½x1¼x ¾	.37	.48
1½x1¼x1	.37	.48
1½x1¼x1¼	.37	.48
1½x1¼x1½	.37	.48
1½x1½x ½	.37	.48
1½x1½x ¾	.37	.48
1½x1½x1	.37	.48
1½x1½x1¼	.37	.48
1 x1 x2	.57	.75
1¼x1¼x2	.57	.75
1½x1½x2	.57	.75
2 x ½x2	.57	.75
2 x ¾x2	.57	.75
2 x1 x2	.57	.75
2 x1¼x1¼	.57	.75
2 x1¼x1½	.57	.75
2 x1¼x2	.57	.75
2 x1½x1	.57	.75
2 x1½x1¼	.57	.75

Flat Band Reducing Tees—Con't

Size, Inches A B C	No. 7118 Black Each	No. 7518 Galv. Each
2 x1½x1½	.57	.75
2 x1½x2	.57	.75
2 x2 x ½	.57	.75
2 x2 x ¾	.57	.75
2 x2 x1	.57	.75
2 x2 x1¼	.57	.75
2 x2 x1½	.57	.75
2 x2 x2½	1.00	1.30
2½x1½x2	1.00	1.30
2½x1½x2½	1.00	1.30
2½x2 x2	1.00	1.30
2½x2 x2½	1.00	1.30
2½x2½x ¾	1.00	1.30
2½x2½x1	1.00	1.30
2½x2½x1¼	1.00	1.30
2½x2½x1½	1.00	1.30
2½x2½x2	1.00	1.30
2½x2½x3	1.45	1.90
3 x2 x2	1.45	1.90
3 x2 x3	1.45	1.90
3 x2½x2	1.45	1.90
3 x2½x2½	1.45	1.90
3 x3 x ¾	1.45	1.90
3 x3 x1	1.45	1.90
3 x3 x1¼	1.45	1.90
3 x3 x1½	1.45	1.90
3 x3 x2	1.45	1.90
3 x3 x2½	1.45	1.90
3 x3 x4	2.65	3.45
4 x3 x4	2.65	3.45
4 x4 x1½	2.65	3.45
4 x4 x2	2.65	3.45
4 x4 x2½	2.65	3.45
4 x4 x3	2.65	3.45
6 x6 x2	6.60	8.60
6 x6 x3	6.60	8.60
6 x6 x4	6.60	8.60

Flat Band Street Tees



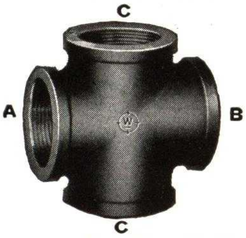
Size Inches	No. 7122 Black Each	No. 7522 Galv. Each
¼	$.09	$.12
⅜	.09	.12
½	.12	.16
¾	.15	.20
1	.20	.26
1¼	.30	.39
1½	.38	.50
2	.60	.78

Flat Band Reducing Street Tees

Size, Inches A B C	No. 7123 Black Each	No. 7523 Galv. Each
1 x1 x ¾	$.22	$.29
1 x1 x1¼	.33	.43
1¼x ¾x1¼	.33	.43
1¼x1 x1	.33	.43
1¼x1 x1¼	.33	.43
1½x1 x1½	.42	.55
1½x1¼x1½	.42	.55
2 x1½x2	.66	.86
2 x2 x1	.66	.86

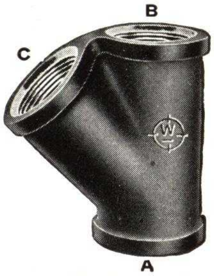
Walworth Standard 150-Pound Malleable Iron Fittings

Flat Band Crosses



Size Inches	No. 7126 Black Each	No. 7526 Galv. Each
⅛	$.11	$.14
¼	.11	.14
⅜	.11	.14
½	.13	.17
¾	.18	.23
1	.23	.30
1¼	.35	.46
1½	.44	.57
2	.70	.90
2½	1.25	1.65
3	1.75	2.30
3½	2.65	3.45
4	3.15	4.10
5	5.70	7.40
6	8.15	10.60

Flat Band Y Branches



Size Inches	No. 7129 Black Each	No. 7529 Galv. Each
⅜	$.10	$.13
½	.14	.18
¾	.18	.23
1	.25	.33
1¼	.40	.52
1½	.57	.75
2	.85	1.10
2½	1.55	2.00
3	2.80	3.65
4	4.80	6.25

Flat Band Reducing Couplings

Size Inches	No. 7134 Black Each	No. 7534 Galv. Each
¼x⅛	$.05	$.07
⅜x⅛	.05	.07
⅜x¼	.05	.07
½x⅛	.06	.08
½x¼	.06	.08
½x⅜	.06	.08
¾x¼	.09	.12
¾x⅜	.09	.12
¾x½	.09	.12
1 x¼	.12	.16
1 x⅜	.12	.16

Flat Band Reducing Couplings

Size Inches	No. 7134 Black Each	No. 7534 Galv. Each
1 x ½	$.12	$.16
1 x ¾	.12	.16
1¼x ½	.15	.20
1¼x ¾	.15	.20
1¼x1	.15	.20
1½x ½	.18	.23
1½x ¾	.18	.23
1½x1	.18	.23
1½x1¼	.18	.23
2 x ½	.28	.36
2 x ¾	.28	.36
2 x1	.28	.36
2 x1¼	.28	.36
2 x1½	.28	.36
2½x1	.50	.65
2½x1¼	.50	.65
2½x1½	.50	.65
2½x2	.50	.65
3 x1	.75	1.00
3 x1¼	.75	1.00
3 x1½	.75	1.00
3 x2	.75	1.00
3 x2½	.75	1.00
3½x2	1.10	1.45
3½x2½	1.10	1.45
3½x3	1.10	1.45
4 x1½	1.40	1.85
4 x2	1.40	1.85
4 x2½	1.40	1.85
4 x3	1.40	1.85
4 x3½	1.40	1.85
5 x4	2.50	3.25
6 x4	3.60	4.70

Plain Couplings

Size Inches	No. 7130 Black Each	No. 7530 Galv. Each
⅛	$.05	$.07
¼	.05	.07
⅜	.05	.07
½	.06	.08
¾	.09	.12
1	.12	.16
1¼	.16	.21
1½	.21	.27
2	.34	.44

Flat Band Couplings

Size Inches	No. 7133 Black Each	No. 7533 Galv. Each
¼	$.05	$.07
⅜	.05	.07
½	.06	.08
¾	.09	.12
1	.12	.16
1¼	.16	.21
1½	.21	.27
2	.34	.44
2½	.60	.78
3	.85	1.10
3½	1.25	1.60
4	1.50	1.95

Walworth Standard 150-Pound Malleable Iron Fittings

Flat Band Right and Left Couplings

Size Inches	No. 7135 Black Each	No. 7535 Galv. Each
½	$.06	$.08
¾	.09	.12
1	.12	.16
1¼	.16	.21
1½	.21	.27
2	.34	.44

Flat Band Caps

Size Inches	No. 7138 Black Each	No. 7538 Galv. Each
¼	$.04	$.05
⅜	.04	.05
½	.05	.07
¾	.08	.10
1	.10	.13
1¼	.13	.17
1½	.18	.23
2	.25	.33
2½	.40	.52
3	.60	.78
3½	.80	1.05
4	1.10	1.45
5	1.80	2.35
6	2.70	3.50

Plain Caps

Size Inches	No. 7137 Black Each	No. 7537 Galv. Each
⅛	$.04	$.05
¼	.04	.05
⅜	.04	.05
½	.05	.07
¾	.08	.10
1	.10	.13
1¼	.13	.17
1½	.18	.23
2	.25	.33

Lock Nuts

Size Inches	No. 7147 Black Each	No. 7547 Galv. Each
⅛	$.02½	$.03½
¼	.02½	.03½
⅜	.02½	.03½
½	.03	.04
¾	.04	.05
1	.06	.08
1¼	.08	.10
1½	.10	.13
2	.12	.16

Waste Nuts

Size Inches	No. 7906 Black Each	No. 7956 Galv. Each
⅛	$.04	$.05
¼	.04	.05
⅜	.04	.05
½	.04	.05
¾	.05	.07
1	.06	.08
1¼	.11	.14
1½	.25	.33
2	.41	.53

Close Return Bends
Right Hand

Size Inches	No. 7139 Black Each	No. 7539 Galv. Each	Center to Center Inches
½	$.16	$.21	1
¾	.18	.23	1¼
1	.24	.31	1½
1¼	.36	.47	1¾
1½	.49	.64	2 3/16
2	.80	1.05	2⅝

Medium Return Bends
Right Hand

Size Inches	No. 7141 Black Each	No. 7541 Galv. Each	Center to Center Inches
½	$.17	$.22	1¼
¾	.20	.26	1½
1	.26	.34	1⅞
1¼	.40	.52	2¼
1½	.55	.72	2½
2	.88	1.15	3

Open Return Bends
Right Hand

Size Inches	No. 7143 Black Each	No. 7543 Galv. Each	Center to Center Inches
½	$.19	$.25	1½
¾	.22	.29	2
1	.29	.38	2½
1¼	.44	.57	3
1½	.62	.80	3½
2	1.00	1.30	4
2½	1.45	1.90	4½
3	2.15	2.80	5
4	5.80	7.55	...

Walworth A.A.R. Malleable Iron Fittings

Developed for Railroad Service at the Instigation of the American Association of Railroads
300 Pounds Service Steam Pressure at 550° F.
Tested 150 Pounds Air under Water

No. 7300 90° Elbows

1¼
WALWORTH
300 WSP
AAR

Size In.	Each	Size In.	Each
¼	$.25	1¼	$.55
⅜	.25	1½	.70
½	.30	2	.90
¾	.35	2½	1.50
1	.40	3	2.40

No. 7300 90° Reducing Elbows

Stock Sizes

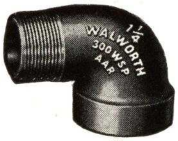
Size inches	Each
½x ⅜	$.30
¾x ½	.35
1 x ¾	.40
1¼x1	.55
1½x1¼	.70
1½x1	.70
2 x1½	.90
2½x2	1.50
3 x2½	2.40

No. 7301 45° Elbows

1¼
WALWORTH
300 WSP
AAR

Size In.	Each	Size In.	Each
¼	$.30	1¼	$.65
⅜	.30	1½	.85
½	.35	2	1.10
¾	.42	2½	1.85
1	.50	3	2.85

No. 7302 90° Street Elbows



Size In.	Each	Size In.	Each
¼	$.30	1¼	$.70
⅜	.30	1½	.90
½	.40	2	1.25
¾	.45	2½	2.10
1	.50	3	3.10

No. 7313 45° Street Elbows

1¼
WALWORTH
300 WSP
AAR

Size In.	Each	Size In.	Each
¼	$.38	1	$.63
⅜	.38	1¼	.88
½	.50	1½	1.12
¾	.56	2	1.55

No. 7314 Caps

WALWORTH
1¼ 300 WSP
AAR

Size In.	Each	Size In.	Each
¼	$.17	1¼	$.38
⅜	.17	1½	.50
½	.19	2	.65
¾	.23	2½	1.00
1	.29	3	1.35

No. 7304 Tees

1¼
WALWORTH
300 WSP
AAR

Size In.	Each	Size In.	Each
¼	$.40	1¼	$.80
⅜	.40	1½	1.05
½	.45	2	1.35
¾	.50	2½	2.25
1	.60	3	3.60

No. 7304 Reducing Tees

Stock Sizes

Size, Inches	Each
½x ½x ⅜	$.45
½x ⅜x ½	.45
¾x ¾x ½	.50
¾x ½x ¾	.50
1 x1 x ¾	.60
1 x1 x ½	.60
1 x1 x ⅜	.60
1 x ¾x1	.60
1¼x1¼x1	.80
1¼x1¼x ¾	.80
1¼x1¼x ½	.80
1¼x1 x1¼	.80
1½x1½x1¼	1.05
1½x1½x1	1.05
1½x1½x ¾	1.05
1½x1½x ½	1.05
1½x1¼x1½	1.05
2 x2 x1½	1.35
2 x2 x1¼	1.35
2 x2 x1	1.35
2 x2 x ¾	1.35
2 x2 x ½	1.35
2 x1½x2	1.35
2½x2½x2	2.25
2½x2½x1½	2.25
2½x2 x2½	2.25
3 x3 x2½	3.60
3 x3 x2	3.60
3 x2½x3	3.60

For galvanized fittings, add 50% to above lists.

Walworth A.A.R. Malleable Iron Fittings

Developed for Railroad Service at the Instigation of the American Association of Railroads
300 Pounds Service Steam Pressure at 550° F.
Tested 150 Pounds Air under Water

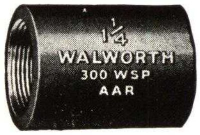
No. 7306 Crosses

1¼
WALWORTH
300 WSP
AAR

Size In.	Each	Size In.	Each
¼	$.80	1¼	$1.60
⅜	.80	1½	2.10
½	.90	2	2.70
¾	1.00	2½	4.50
1	1.20	3	7.20

Reducing crosses to order.

No. 7310 Couplings

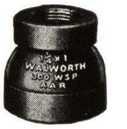


Taper tapped from both ends; has recess inside of thread.

Size In.	Each	Size In.	Each
¼	$.14	1¼	$.34
⅜	.14	1½	.42
½	.14	2	.56
¾	.20	2½	.80
1	.26	3	1.20

No. 7308 Reducing Couplings

Stock Sizes



Size Inches	Each
⅜x¼	$.25
½x⅜	.28
¾x½	.30

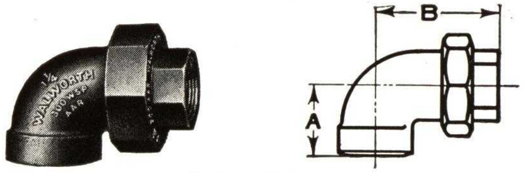
Size Inches	Each	Size Inches	Each
1 x ¾	.40	2 x1½	.70
1 x ½	.40	2 x1¼	.70
1¼x1	.45	2 x1	.70
1¼x ¾	.45	2 x ¾	.70
1¼x ½	.45	2 x ½	.70
1½x1¼	.55	2½x2	1.30
1½x1	.55	3 x2½	2.25
1½x ¾	.55	3 x2	2.25
1½x ½	.55	3 x1½	2.25
		....	....

For galvanized fittings, add 50 per cent to above lists.

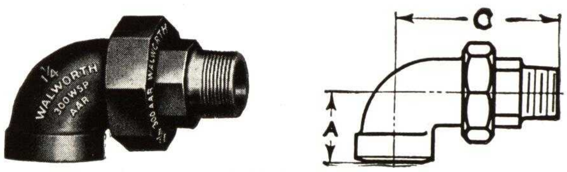
Walworth A.A.R. Malleable Iron 90° Union Elbows

Bronze to Iron Seat

300 Pounds Service Steam Pressure at 550°F.
600 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure



Female Union



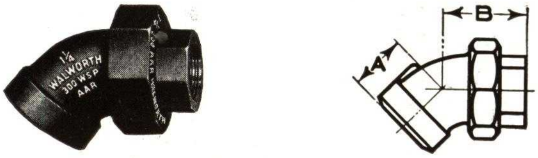
Male Union

Size Inches	Nos. 7340 and 7341 Black Each	Nos. 7689 and 7690 Galv. Each	Dimensions, Inches A	B	C
¼	$.60	$.80	15/16	2	2 9/16
⅜	.60	.80	1 1/16	2¼	2⅞
½	.75	1.00	1¼	2 7/16	3 3/16
¾	.90	1.20	1 7/16	2⅞	3¾
1	1.20	1.60	1⅝	3 3/16	4 1/16
1¼	1.80	2.40	1 15/16	3 11/16	4⅝
1½	2.40	3.20	2⅛	3 15/16	4⅞
2	3.00	4.00	2½	4½	5⅜
2½	4.80	6.40	2 15/16	5 7/16	6 7/16
3	7.50	10.00	3⅜	5 15/16	7 3/16

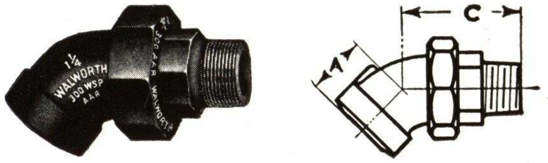
Walworth A.A.R. Malleable Iron 45° Union Elbows

Bronze to Iron Seat

300 Pounds Service Steam Pressure at 550°F.
600 Pounds Non-Shock Service Cold Oil,
Water or Gas Pressure


1¼
WALWORTH
300 WSP
AAR
B
A

Female Union


1¼
WALWORTH
300 WSP
AAR
C
A

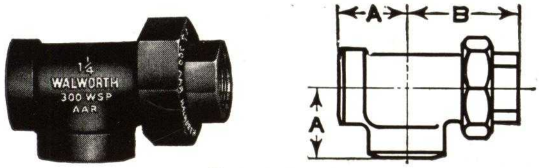
Male Union

Size Inches	Nos. 7342 and 7343 Black Each	Nos. 7691 and 7692 Galv. Each	Dimensions, Inches A	B	C
1/4	$.60	$.80	13/16	1 5/8	2 3/16
3/8	.60	.80	7/8	1 3/4	2 7/16
1/2	.75	1.00	1	1 15/16	2 11/16
3/4	.90	1.20	1 1/8	2 3/16	3 1/16
1	1.20	1.60	1 5/16	2 1/2	3 7/16
1 1/4	1.80	2.40	1 1/2	2 7/8	3 13/16
1 1/2	2.40	3.20	1 11/16	3 3/16	4 1/8
2	3.00	4.00	2	3 11/16	4 9/16

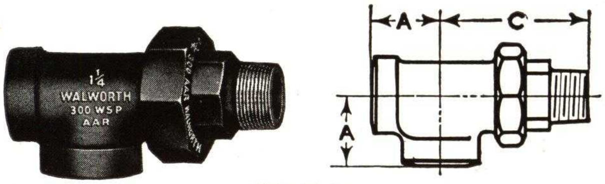
Walworth A.A.R. Malleable Iron Union Tees

Bronze to Iron Seat

300 Pounds Service Steam Pressure at 550°F.
600 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure


1¼
WALWORTH
300 WSP
AAR
A
B
A

Female Union


1¼
WALWORTH
300 WSP
AAR
A
C
A

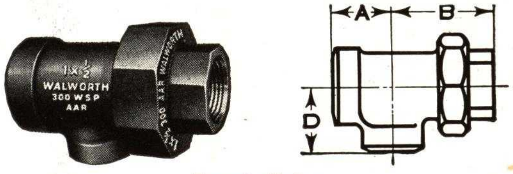
Male Union

Size Inches	Nos. 7344 and 7345 Black Each	Nos. 7693 and 7694 Galv. Each	Dimensions, Inches A	B	C
1/4	$.66	$.88	15/16	2	2 9/16
3/8	.66	.88	1 1/16	2 1/4	2 7/8
1/2	.82	1.10	1 1/4	2 7/16	3 3/16
3/4	1.00	1.32	1 7/16	2 7/8	3 3/4
1	1.32	1.75	1 5/8	3 3/16	4 1/16
1 1/4	1.98	2.65	1 15/16	3 11/16	4 5/8
1 1/2	2.64	3.50	2 1/8	3 15/16	4 7/8
2	3.30	4.40	2 1/2	4 1/2	5 3/8
2 1/2	5.30	7.10	2 15/16	5 7/16	6 7/16

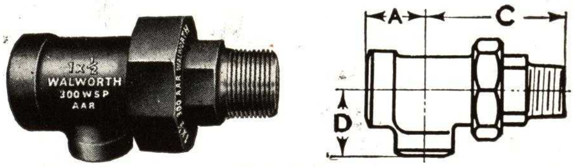
Walworth A.A.R. Malleable Iron Reducing Union Tees

Bronze to Iron Seat

300 Pounds Service Steam Pressure at 550°F.
600 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure


1x½
WALWORTH
300 WSP
AAR
A
B
D

Female Union


1x½
WALWORTH
300 WSP
AAR
A
C
D

Male Union

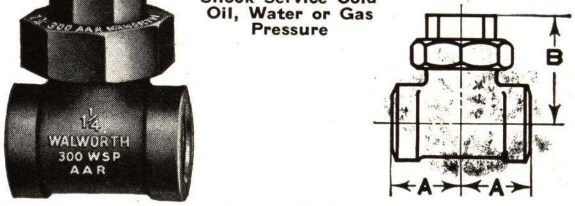
Size Inches	Nos. 7346 and 7347 Black Each	Nos. 7695 and 7696 Galv. Each	Dimensions, Inches A	B	C	D
1x3/8	$1.45	$1.95	1 5/16	2 3/4	3 21/32	1 7/16
1x1/2	1.45	1.95	1 7/16	2 7/8	3 13/16	1 1/2
1x3/4	1.45	1.95	1 1/2	3	3 29/32	1 9/16

Walworth A.A.R. Malleable Iron Union Tees

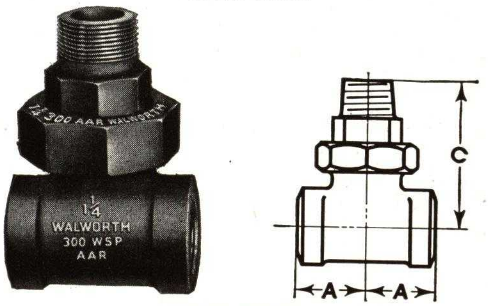
Bronze to Iron Seat—With Union on Outlet

300 Pounds Service Steam Pressure at 550°F.

600 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure


1¼
WALWORTH
300 WSP
AAR
B
A
A

Female Union


1¼
WALWORTH
300 WSP
AAR
C
A
A

Male Union

Size Inches	Nos. 7348 and 7349 Black, Each	Nos. 7697 and 7698 Galv., Each	Dimensions, Inches A	B	C
1/4	$.75	$1.00	15/16	2	2 9/16
3/8	.75	1.00	1 1/16	2 1/4	2 7/8
1/2	.82	1.10	1 1/4	2 7/16	3 3/16
3/4	1.00	1.32	1 7/16	2 7/8	3 3/4
1	1.32	1.75	1 5/8	3 3/16	4 1/16
1 1/4	1.98	2.65	1 15/16	3 11/16	4 5/8
1 1/2	2.64	3.50	2 1/8	3 15/16	4 7/8
2	3.30	4.40	2 1/2	4 1/2	5 3/8

PIPE FOR WELDING

We Can Furnish Pipe with
Ends Beveled for Welding

Prices and Information Cheerfully Furnished

Walworth 300-Pound Malleable Iron Fittings

Black

Steam or Oil Service Pressure at 550°F.
¼ to 6 Inches: 300 Pounds
8 to 12 Inches: 250 Pounds

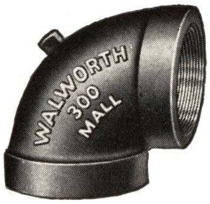
Cold Oil, Water or Gas Non-Shock Service Pressure
¼ to 1 Inch: 2000 Pounds
1¼ to 2 Inches: 1500 Pounds
2½ to 4 Inches: 1000 Pounds
5 to 10 Inches: 800 Pounds
12 Inches: 600 Pounds

Suitable for high pressure oil, water, gas, air or steam lines.

Fittings carry beads of large diameter and are of greater length than fittings of the usual types. Thread lengths are made with extra long thread which assures the making of tight joints without difficulty.

Marked with both steam and cold O.W.G. ratings and MALL. Markings may appear all on one side, or part on one side and part on the other.

No. 7190 90° Elbows



Size Inches	Each	Center to End Inches
¼	$.25	15/16
⅜	.25	1 1/16
½	.30	1¼
¾	.35	1 7/16
1	.40	1⅝
1¼	.55	1 15/16
1½	.70	2⅛
2	.90	2½
2½	1.50	3¼
3	2.40	3¾
3½	3.25	4⅛
4	4.25	4½
5	6.50	5½
6	11.00	6¼
8	21.00	7¾
10	37.00	9¼
12	60.00	11½

No. 7190A 90° Reducing Elbows

Stock Sizes

Size Inches	Each
⅜x ¼	$.25
½x ⅜	.30
¾x ½	.35
¾x ⅜	.35
1 x ¾	.40
1 x ½	.40
1¼x1	.55
1¼x ¾	.55
1½x1¼	.70
1½x1	.70
2 x1½	.90
2 x1¼	.90
2½x2	1.50
3 x2½	2.40

No. 7191 45° Elbows

WALWORTH
300
MALL

Size Inches	Each	Center to End Inches
¼	$.30	13/16
⅜	.30	⅞
½	.35	1
¾	.42	1⅛
1	.50	1 5/16
1¼	.65	1½
1½	.85	1 11/16
2	1.10	2
2½	1.85	2¼
3	2.85	2½
3½	4.00	2½
4	5.00	2 13/16
5	7.50	3⅛
6	12.75	3½
8	26.00	4 5/16
10	45.00	5 3/16
12	72.00	6

No. 7192 Tees

WALWORTH
300
MALL

Size Inches	Each	Center to End Inches
¼	$.40	15/16
⅜	.40	1 1/16
½	.45	1¼
¾	.50	1 7/16
1	.60	1⅝
1¼	.80	1 15/16
1½	1.05	2⅛
2	1.35	2½
2½	2.25	3¼
3	3.60	3¾
3½	5.00	4⅛
4	6.50	4½
5	9.75	5½
6	16.50	6¼
8	32.00	7¾
10	55.00	9¼
12	90.00	11½

For galvanized fittings, add 50 per cent to above lists.

Walworth 300-Pound Malleable Iron Fittings

Black

Steam or Oil Service Pressure at 550°F.
¼ to 4 Inches: 300 Pounds
***Cold Oil, Water or Gas Non-Shock Service Pressure**
¼ to 1 Inch: 2000 Pounds
1¼ to 2 Inches: 1500 Pounds
2½ to 4 Inches: 1000 Pounds

Suitable for high pressure oil, water, gas, air or steam lines.

Fittings carry beads of large diameter and are of greater length than fittings of the usual types. Thread lengths are made with extra long thread which assures the making of tight joints without difficulty.

Marked with both steam and cold O.W.G. ratings and MALL. Markings may appear all on one side, or part on one side and part on the other.

No. 7192A Reducing Tees

Stock Sizes

Size Inches	Each
⅜x ⅜x ¼	$.40
½x ½x ⅜	.45
½x ½x ¼	.45
½x ⅜x ½	.45
¾x ¾x ½	.50
¾x ¾x ⅜	.50
¾x ¾x ¼	.50
¾x ½x ¾	.50
¾x ½x ½	.50
½x ½x ¾	.50
1 x1 x ¾	.60
1 x1 x ½	.60
1 x1 x ⅜	.60
1 x1 x ¼	.60
1 x ¾x1	.60
1 x ¾x ¾	.60
1 x ½x1	.60
¾x ¾x1	.60
1¼x1¼x1	.80
1¼x1¼x ¾	.80
1¼x1¼x ½	.80
1¼x1¼x ⅜	.80
1¼x1 x1¼	.80
1¼x1 x1	.80
1¼x ¾x1¼	.80
1½x1½x1¼	1.05
1½x1½x1	1.05
1½x1½x ¾	1.05
1½x1½x ½	1.05
1½x1¼x1½	1.05
2 x2 x1½	1.35
2 x2 x1¼	1.35
2 x2 x1	1.35
2 x2 x ¾	1.35
2 x2 x ½	1.35
2 x1½x2	1.35
2½x2½x2	2.25
2½x2½x1½	2.25
2½x2 x2½	2.25
3 x3 x2½	3.60
3 x3 x2	3.60
3 x3 x1½	3.60
3 x2½x3	3.60
4 x4 x3	6.50
4 x4 x2½	6.50
4 x4 x2	6.50

No. 7196 Caps

WALWORTH
1¼ 300 MALL

Size Inches	Each	Height Inches
¼	$.17	¾
⅜	.17	⅞
½	.19	1
¾	.23	1 1/16
1	.29	1¼
1¼	.38	1⅜
1½	.50	1 7/16
2	.65	1 11/16
2½	1.00	2 1/16
3	1.35	2 3/16

*No. 7194 *90° Street Elbows

WALWORTH
300
MALL

Size Inches	Each	Center to Female End Inches	Center to Male End Inches
¼	$.30	15/16	1 7/16
⅜	.30	1 1/16	1⅝
½	.40	1¼	2
¾	.45	1 7/16	2 3/16
1	.50	1⅝	2 9/16
1¼	.70	1 15/16	2⅞
1½	.90	2⅛	3⅛
2	1.25	2½	3 11/16
2½	2.10	2 15/16	4½
3	3.10	3⅜	5⅛

*No. 7194A 45° Street Elbows

WALWORTH
300
MALL

Size Inches	Each	Center to Female End Inches	Center to Male End Inches
½	$.50	1	1⅜
¾	.56	1⅛	1 9/16
1	.63	1 5/16	1 13/16
1¼	.88	1½	2⅛
1½	1.12	1 11/16	2 5/16
2	1.55	2	2 11/16

*Street elbows are recommended for only 500 pounds cold oil, water or gas non-shock service pressure.

For galvanized fittings, add 50 per cent to above lists.

Walworth 300-Pound Malleable Iron Fittings

Black

Steam or Oil Service Pressure at 550°F.
¼ to 4 Inches: 300 Pounds
Cold Oil, Water or Gas Non-Shock Service Pressure
¼ to 1 Inch: 2000 Pounds
1¼ to 2 Inches: 1500 Pounds
2½ to 4 Inches: 1000 Pounds

Suitable for high pressure oil, water, gas, air or steam lines.

Fittings carry beads of large diameter and are of greater length than fittings of the usual types. Thread lengths are made with extra long thread which assures the making of tight joints without difficulty.

Marked with both steam and cold O.W.G. ratings and MALL. Markings may appear all on one side, or part on one side and part on the other.

No. 7193 Crosses

WALWORTH
300
MALL

Size Inches	Each	Center to End Inches
¼	$.80	15/16
⅜	.80	1 1/16
½	.90	1¼
¾	1.00	1 7/16
1	1.20	1⅝
1¼	1.60	1 15/16
1½	2.10	2⅛
2	2.70	2½
2½	4.50	3¼
3	7.20	3¾
3½	10.00	4⅛
4	13.00	4½

No. 7310 Couplings

WALWORTH
300
MALL

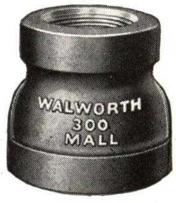
Size Inches	Each	End To End Inches
¼	$.14	1⅜
⅜	.14	1⅝
½	.14	1⅞
¾	.20	2⅛
1	.26	2⅜
1¼	.34	2⅞
1½	.42	2⅞
2	.56	3⅝
2½	.80	4⅛
3	1.20	4⅛

No. 7309 Return Bends

WALWORTH
300
MALL

Size Inches	Each	C to C Inches	End to Back Inches
1	$.60	1¾	2 5/16
1	.75	2½	2¾
1	.85	3	3⅛
1¼	.90	2¼	3
1¼	.95	2½	3½
1¼	1.00	3	3½
1½	1.15	3	3 9/16
1½	1.25	3½	3 15/16
1½	1.75	6	4¼
2	1.90	4	4¾
2	3.25	6	4½
2	3.50	8	5¼

No. 7195 Reducing Couplings



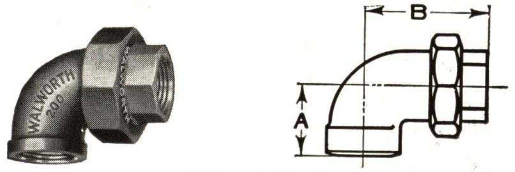
Size Inches	Each	End To End Inches
⅜x ¼	$.25	1 7/16
½x ⅜	.28	1 11/16
½x ¼	.28	1 11/16
¾x ½	.30	1¾
¾x ⅜	.30	1¾
¾x ¼	.30	1¾
1 x ¾	.40	2
1 x ½	.40	2
1 x ⅜	.40	2
1 x ¼	.40	2
1¼x1	.45	2⅜
1¼x ¾	.45	2⅜
1¼x ½	.45	2⅜
1½x1¼	.55	2 11/16
1½x1	.55	2 11/16
1½x ¾	.55	2 11/16
1½x ½	.55	2 11/16
2 x1½	.70	3 3/16
2 x1¼	.70	3 3/16
2 x1	.70	3 3/16
2 x ¾	.70	3 3/16
2 x ½	.70	3 3/16
2½x2	1.30	3 11/16
2½x1½	1.30	3 11/16
3 x2½	2.25	4 1/16
3 x2	2.25	4 1/16
3 x1½	2.25	4 1/16
4 x3	4.25	4⅜
4 x2½	4.25	4⅜
4 x2	4.25	4⅜

For galvanized fittings, add 50 per cent to above lists.

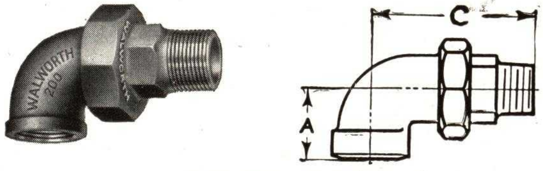
Walco Malleable Iron Union Elbows

Bronze to Iron Seat

200 Pounds Service Steam Pressure
400 Pounds Non-Shock Service Cold Oil, Water, or Gas Pressure



Female Union End
No. 7231, Black—No. 7631, Galvanized



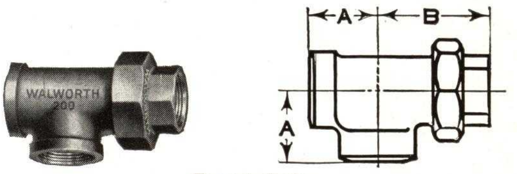
Male Union End
No. 7230, Black—No. 7630, Galvanized

Size Inches	Nos. 7230 and 7231 Black Each	Nos. 7630 and 7631 Galv. Each	Dimensions, Inches A	B	C
¼	$.60	$.80	⅞	1 13/16	2⅜
⅜	.60	.80	1	2 1/16	2 11/16
½	.75	1.00	1¼	2 7/16	3⅛
¾	.90	1.20	1 7/16	2⅝	3 7/16
1	1.20	1.60	1⅝	2 13/16	3 13/16
1¼	1.80	2.40	2	3⅜	4 7/16
1½	2.40	3.20	2 3/16	4 1/16	4 15/16
2	3.00	4.00	2 7/16	4 5/16	5⅛
2½	4.80	6.40	3	5	6
3	7.50	10.00	3 5/16	5¾	6 11/16

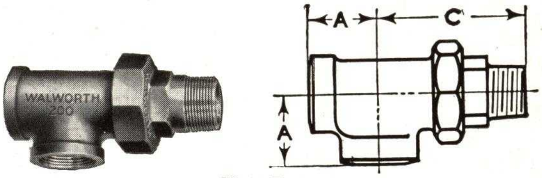
Walco Malleable Iron Union Tees

Bronze to Iron Seat

150 Pounds Service Steam Pressure
300 Pounds Non-Shock Service Cold Oil, Water, or Gas Pressure



Female Ends,
No. 7233, Black—No. 7633, Galvanized



Male Ends,
No. 7232, Black—No. 7632, Galvanized

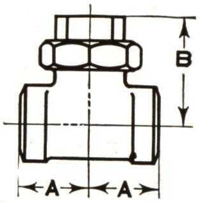
Size Inches	Nos. 7232 and 7233 Black Each	Nos. 7632 and 7633 Galv. Each	Dimensions, Inches A	B	C
¼	$.66	$.88	13/16	1 13/16	2⅜
⅜	.66	.88	⅞	2 1/16	2 11/16
½	.82	1.10	1	2¼	2 15/16
¾	1.00	1.32	1 3/16	2½	3¼
1	1.32	1.75	1⅜	2 15/16	3 15/16
1¼	1.98	2.65	1 11/16	3⅜	4 7/16
1½	2.64	3.50	1⅞	3¾	4⅝
2	3.30	4.40	2¼	4 3/16	5
2½	5.30	7.10	2 11/16	5⅛	6 1/16

Walco Malleable Iron Union Tees

With Union on Outlet
Bronze to Iron Seat

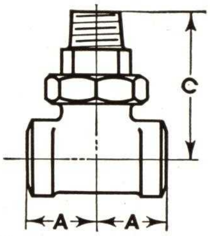
150 Pounds Service Steam Pressure
300 Pounds Non-Shock Service Cold Oil, Water, or Gas Pressure

WALWORTH
200



Female Ends,
No. 7266, Black—No. 7666, Galvanized

WALWORTH
200



Male Ends,
No. 7267, Black—No. 7667 Galvanized

Size Inches	Nos. 7266 and 7267 Black Each	Nos. 7666 and 7667 Galv. Each	Dimensions, Inches A	B	C
¾	$1.00	$1.32	1 3/16	2½	3¼
1	1.32	1.75	1⅜	2 15/16	3 15/16
1¼	1.98	2.65	1 11/16	3⅜	4 7/16

Walworth Circulating Boiler Union Elbows

Galvanized Malleable Iron—New Pattern

No. 7634 Gasket Type—No. 7642 Bronze to Iron Seat

150 Pounds Service Pressure at 200°F.

These fittings are read in the following order: The inside end, the internal thread of the outside end, and the external thread of the outside end.

Size........ inches	¾x¾x1	¾x½x1	½x½x1
Each............	$.75	.75	.60

Walworth Circulating Boiler Union Couplings

Galvanized Malleable Iron—New Pattern

No. 7635 Gasket Type—No. 7643 Bronze to Iron Seat

150 Pounds Service Pressure at 200°F.

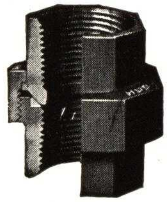
These fittings are read in the following order: The inside end, the internal thread of the outside end, and the external thread of the outside end.

Size............ inches	¾x¾x1	¾x½x1	½x½x1
Each..................	$.75	.75	.60

Walworth Malleable Iron Hub Unions

Bronze to Iron Seat—Ground Joint

150 Pounds Service Steam Pressure
300 Pounds Non-Shock Service, Cold Oil, Water and Gas Pressure

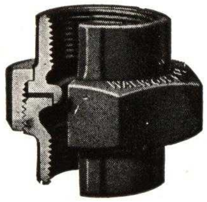


Size Inches	No. 7712 Black Each	No. 7762 Galv. Each
¼	$.45	$.50
⅜	.45	.50
½	.50	.55
¾	.60	.70
1	.80	.95
1¼	1.20	1.40
1½	1.55	1.80
2	2.30	2.60
2½	3.80	4.50
3	5.50	6.60

Walworth Malleable Iron Unions

Female Ends—With Lip—Gasket Type

150 Pounds Working Steam Pressure



Size Inches	No. 7701 Black Each	No. 7751 Galv. Each
¼	$.20	$.30
⅜	.20	.30
½	.22	.33
¾	.27	.40
1	.33	.50
1¼	.46	.70
1½	.58	.90
2	.75	1.15
2½	1.55	2.35
3	2.10	3.15

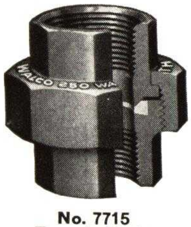
Walco Malleable Iron Unions

Bronze Cone to Ball Iron Seat

250 Pounds Service Steam Pressure
500 Pounds Non-Shock Service Cold Oil, Water, or Gas Pressure

WALWORTH 250

No. 7714
Male and Female Ends



No. 7715
Female Ends

For use on lines carrying hazardous liquids. American Standard pipe threads with the ends countersunk to permit easy starting of pipe. Bronze seat ring is forced into a recess in iron end of union under high pressure, making bronze mechanically integral with the iron.

Size Inches	Male and Female Ends No. 7714 Black Each	No. 7764 Galv. Each	End to End Inches	Female Ends No. 7715 Black Each	No. 7765 Galv. Each	End to End Inches
¼	$.56	$.67	2 3/16	$.45	$.50	1⅝
⅜	.56	.67	2⅜	.45	.50	1 13/16
½	.63	.74	2 11/16	.50	.55	1 15/16
¾	.75	.93	2⅞	.60	.70	2⅛
1	1.00	1.27	3⅜	.80	.95	2 7/16
1¼	1.50	1.87	3 11/16	1.20	1.40	2⅝
1½	1.94	2.40	3⅞	1.55	1.80	3
2	2.88	3.47	4⅛	2.30	2.60	3⅜
*2½	4.75	6.00	4 15/16	3.80	4.50	4
*3	6.88	8.80	5 5/16	5.50	6.60	4⅜

*Has round ends with ribs.

Walco 300-Pound Malleable Iron Unions

Bronze to Iron Seat
Ground Joints—Octagon Ends and Rings

300 Pounds Service Steam Pressure at 550°F.
600 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

WALWORTH 300

No. 7716

Size Inches	No. 7716 Black Each	No. 7766 Galv. Each	End to End Inches
1/8	$.45	$.50	1 15/32
1/4	.45	.50	1 5/8
3/8	.45	.50	1 13/16
1/2	.50	.55	1 15/16
3/4	.60	.70	2 1/4
1	.80	.95	2 7/16
1 1/4	1.20	1.40	2 13/16
1 1/2	1.55	1.80	3
2	2.30	2.60	3 3/8
2 1/2	3.80	4.50	4
3	5.50	6.60	4 5/16

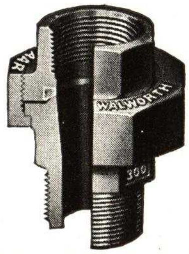
Walworth A.A.R. Malleable Iron Unions

Bronze to Iron Seat

300 Pounds Service Steam Pressure at 550°F.
600 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

300 AAR WALWORTH

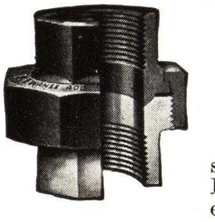
Female Ends



Male and Female Ends

Size Inches	Female Ends No. 7320 Black Each	Female Ends No. 7685 Galv. Each	Female Ends End to End Inches	Male and Female Ends No. 7321 Black Each	Male and Female Ends No. 7686 Galv. Each	Male and Female Ends End to End Inches
1/4	$.45	$.50	1 5/8	$.56	$.67	2 1/4
3/8	.45	.50	1 13/16	.56	.67	2 1/2
1/2	.50	.55	1 15/16	.63	.74	2 11/16
3/4	.60	.70	2 1/4	.75	.93	3 1/8
1	.80	.95	2 7/16	1.00	1.27	3 3/8
1 1/4	1.20	1.40	2 13/16	1.50	1.87	3 3/4
1 1/2	1.55	1.80	3	1.94	2.40	3 15/16
2	2.30	2.60	3 3/8	2.88	3.47	4 5/16
2 1/2	3.80	4.50	4	4.75	6.00	5 1/16
3	5.50	6.60	4 5/16	6.88	8.80	5 1/2

Walworth Kewanee Unions



400-Pound Unions

400 Pounds Steam Service Pressure

Non-Shock Service Oil, Water, or Gas Pressures at Ordinary Air Temperatures:
1/4 to 2 Inches—2000 Pounds
2 1/2 and 3 Inches—1200 Pounds

Forged manganese bronze to forged steel ball joint. No gaskets required. Forged steel ring, forged bronze thread end, and forged steel swivel.

Size In.	No. 8201 Black Each	No. 8251 Galv. Each
*1/4	$.60	$.80
3/8	.60	.80
1/2	.65	.90
3/4	.80	1.10
1	.95	1.30
1 1/4	$1.30	$1.75
1 1/2	1.55	2.10
2	2.50	3.40
2 1/2	7.50	10.00
3	10.50	14.00

*Made with round ends.

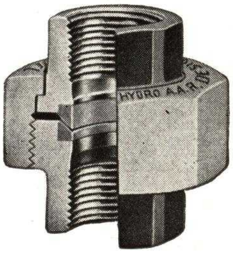
Hydro Forged Steel Unions

Bronze to Bronze Seat

1150 Pounds Steam or Hot Oil Working Pressure at 500°F.
600 Pounds Steam or Hot Oil Working Pressure at 550°F.
400 Pounds Steam or Hot Oil Working Pressure at 600°F.
2000 Pounds Non-Shock Cold Water, Oil or Gas Working Pressure

Split die forgings of high quality, open hearth forging steel. Bronze seats are completely fused to steel by a new method of electric brazing and are not affected by expansion or contraction.

The nuts and nut threads are permanently lubricated, rust-proofed and spark-proofed with Udylite cadmium.



Size In.	Black Comp. Each	Black Ends Each	Udylited Comp. Each	Udylited Ends and Nuts Each	Width Across Nuts In.	Lgth. Over-all In.	Wt. Lb. per 100
1/4	$.50	$.17	$.60	$.20	1 3/8	1 5/8	34
3/8	.50	.17	.60	.20	1 9/16	1 13/16	49
1/2	.60	.20	.75	.25	1 13/16	1 15/16	68
3/4	.70	.24	.90	.30	2 3/16	2 1/4	119
1	.80	.27	1.05	.35	2 9/16	2 7/16	168
1 1/4	1.20	.40	1.50	.50	3 1/16	2 13/16	254
1 1/2	1.60	.54	2.10	.70	3 7/16	3	333
2	2.30	.77	2.90	.97	4 1/16	3 3/8	530
2 1/2	4.50	1.50	5.25	1.75	4 7/8	4	860
3	6.75	2.25	7.75	2.60	5 3/4	4 5/16	1270

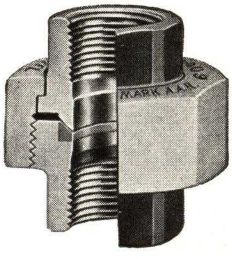
Mark A.A.R. Forged Steel Unions

Bronze to Steel Seat

1150 Pounds Steam or Hot Oil Working Pressure at 500°F.
600 Pounds Steam or Hot Oil Working Pressure at 550°F.
400 Pounds Steam or Hot Oil Working Pressure at 600°F.
2000 Pounds Non-Shock Cold Water, Oil or Gas Working Pressure

Split die forgings of high quality, open hearth forging steel. Bronze seat is completely fused to steel by a new method of electric brazing and is not affected by expansion or contraction.

The nuts and nut threads are permanently lubricated, rust-proofed and spark-proofed with Udylite cadmium.



Size In.	Black Comp. Each	Black Ends Each	Udylited Comp. Each	Udylited Ends or Nuts Each	Width Across Nuts In.	Lgth. Over-all In.	Wt. Lb. per 100
1/4	$.50	$.17	$.60	$.20	1 3/8	1 5/8	34
3/8	.50	.17	.60	.20	1 9/16	1 13/16	49
1/2	.60	.20	.75	.25	1 13/16	1 15/16	68
3/4	.70	.24	.90	.30	2 3/16	2 1/4	119
1	.80	.27	1.05	.35	2 9/16	2 7/16	168
1 1/4	1.20	.40	1.50	.50	3 1/16	2 13/16	254
1 1/2	1.60	.54	2.10	.70	3 7/16	3	333
2	2.30	.77	2.90	.97	4 1/16	3 3/8	530
2 1/2	4.50	1.50	5.25	1.75	4 7/8	4	860
3	6.75	2.25	7.75	2.60	5 3/4	4 5/16	1270

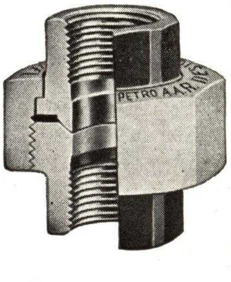
Petro A.A.R. Forged Steel Unions

Steel to Steel Seat

1150 Pounds Steam or Hot Oil Working Pressure at 500°F.
830 Pounds Steam or Hot Oil Working Pressure at 750°F.
630 Pounds Steam or Hot Oil Working Pressure at 850°F.
2000 Pounds Non-Shock Cold Water, Oil or Gas Working Pressure

Split die forgings of high quality open hearth forging steel. Not affected by vibration or shock.

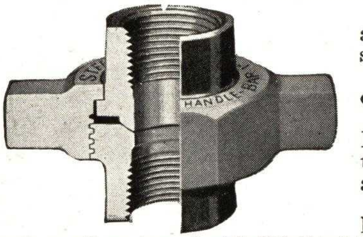
The nut and nut threads are permanently lubricated, rust-proofed and spark-proofed with Udylite cadmium.



Size In.	Black Comp. Each	Black Ends Each	Udylited Comp. Each	Udylited Ends and Nuts Each	Width Across Nuts In.	Lgth. Over-all In.	Wt. Lb. per 100
1/8	$.50	$.14	$.50	$.17	1 1/8	1 1/2	21
1/4	.50	.14	.50	.17	1 3/8	1 5/8	34
3/8	.50	.17	.60	.20	1 9/16	1 13/16	49
1/2	.60	.20	.75	.25	1 13/16	1 15/16	68
3/4	.70	.24	.90	.30	2 3/16	2 1/4	119
1	.80	.27	1.05	.35	2 9/16	2 7/16	168
1 1/4	1.20	.40	1.50	.50	3 1/16	2 13/16	254
1 1/2	1.60	.54	2.10	.70	3 7/16	3	333
2	2.30	.77	2.90	.97	4 1/16	3 3/8	530
2 1/2	4.50	1.50	5.25	1.75	4 7/8	4	860
3	6.75	2.25	7.75	2.60	5 3/4	4 5/16	1270

Handle Bar Forged Steel Unions

1150 Pounds Steam Working Pressure at 550°F.
3000 Pounds Cold Oil, Gas, and Water Working Pressure



For steam, oil, gas, air, water and acidizing service.

Split die forgings of openhearth forging steel.

Hub ends tapped Briggs Standard steam threads. Nut threads are modified Acme.

Furnished with black hub ends with Udylited nut, or all rustproof with Udylited hub ends and parkerized nut.

	Steel to Steel Seats		Bronze to Bronze Seats		Hub Ends Steel to Steel Seats		Hub Ends Bronze to Bronze Seats		Udylited Handle Bar Nut		Handle Bars	
Size In.	Black Each	Udylited Each	Black Each	Udylited Each	Black Each	Udylited Each	Black Each	Udylited Each	Each	Lgth. Over-all In.	End to End In.	Wt. Lb. per 100
3/8	$.75	$.80	$.80	$.85	$.35	$.40	$.45	$.50	$.40	1 13/16	2 3/8	59
1/2	.85	.90	.90	1.00	.40	.45	.50	.55	.45	1 15/16	3	83
3/4	.95	1.10	1.10	1.20	.45	.50	.55	.60	.50	2 1/4	3 1/2	141
1	1.05	1.25	1.25	1.40	.55	.60	.70	.75	.60	2 7/16	4 1/4	197
1 1/4	1.55	1.80	1.80	1.90	.60	.65	.80	.85	.65	2 13/16	5	325
1 1/2	2.00	2.45	2.45	2.60	.70	.80	.90	1.00	.80	3	5 3/4	390
2	2.75	3.20	3.40	3.80	1.00	1.15	1.25	1.40	1.15	3 3/8	6 3/4	650
2 1/2	5.75	6.25	6.50	7.00	1.85	2.10	2.40	2.65	2.10	4	7 3/4	1063
3	8.70	9.15	9.75	10.30	3.00	3.30	3.60	3.90	3.30	4 5/16	8 3/4	1460
4	16.00	17.00	*	*	7.00	8.00	*	*	8.00	8	10 1/2	3260

*Not made.

Walworth Standard Cast Iron Flange Unions

125 Pounds Service Steam Pressure
175 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

Size Inches	No. 1137 Black Each	No. 1537 Galv. Each	Diam. Flange Inches	No. of Bolts	Size Bolt In.
1/2	$.40	$.80	3 1/8	3	3/8
3/4	.46	.92	3 1/8	3	7/16
1	.52	1.04	3 3/4	4	3/8
1 1/4	.64	1.28	4 1/8	4	3/8
1 1/2	.78	1.56	4 3/4	4	1/2
2	1.00	2.00	5 3/8	4	1/2
2 1/2	1.25	2.50	6	4	1/2
3	1.50	3.00	6 3/4	4	5/8
3 1/2	1.80	3.60	7 1/2	4	5/8
4	2.10	4.20	8	5	5/8
5	3.15	6.30	9 3/8	5	5/8
6	3.95	7.90	10 1/2	6	5/8
8	7.00	14.00	13 1/4	8	3/4

Galvanized flange unions are furnished with galvanized bolts.

Each union has a rubber gasket.

Walworth Extra Heavy Flange Unions

Cast Iron

Faced, with Rubber Gasket, with Bolts

250 Pounds Working Steam Pressure
400 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

	Each					Each			
Size In.	No. 1139 Black	No. 1539 Galv.	Diam. Flanges In.	No. of Bolts	Size In.	No. 1139 Black	No. 1539 Galv.	Diam. Flanges In.	No. of Bolts
1/2	$.70	$1.40	3	3	3 1/2	$2.70	$5.40	7 1/2	6
3/4	.70	1.40	3 1/4	4	4	3.15	6.30	8	7
1	.80	1.60	3 5/8	4	5	4.75	9.50	9 3/8	8
1 1/4	1.00	2.00	4 1/8	4	6	6.00	12.00	10 3/4	9
1 1/2	1.15	2.30	4 5/8	4	8	10.50	21.00	13	10
2	1.50	3.00	5 3/8	5	10	17.25	34.50	15 3/4	12
2 1/2	1.90	3.80	6	5	12	24.00	48.00	18	14
3	2.25	4.50	6 3/4	6	....	.....	.....	....	..

Galvanized flange unions are furnished with galvanized bolts. Asbestos gasket for oil service at extra cost.

Walworth Kewanee Flange Unions

Bronze to Malleable Iron Self-Seating Ball Joint

For Steam Working Pressures:
Sizes 1 to 4-Inch, 300 Pounds.
Sizes 5 and 6-Inch, 250 Pounds.
Sizes 8 and 10-Inch, 200 Pounds.

For Non-Shock Working Oil, Water, or Gas Pressures, at Ordinary Air Temperatures:
Sizes 1 to 4-Inch, 800 Pounds.
Sizes 5 and 6-Inch, 500 Pounds.
Sizes 8 and 10-Inch, 400 Pounds.

Sizes 1 to 4-inch inclusive are tested with compressed air under water, larger sizes being given a hydrostatic test.

Size Inches	No. 8301 Black Each	No. 8351 Galvanized Each	Diameter Flange Inches	No. of Bolts	Size Bolts Inches	Height Overall Inches
1	$1.60	$2.20	4	4	7/16	2 7/8
1 1/4	2.40	3.20	4 5/8	4	1/2	3 1/8
1 1/2	3.20	4.30	5	4	1/2	3 1/4
2	4.00	5.40	5 1/2	5	1/2	3 9/16
2 1/2	6.40	8.60	6 5/8	4	5/8	3 15/16
3	9.60	13.00	7 1/2	5	5/8	4 3/8
3 1/2	12.00	16.20	8 1/8	6	5/8	4 5/8
4	15.00	20.30	8 3/4	7	5/8	4 7/8
5	20.00	27.00	10 1/4	6	3/4	5 3/8
6	25.00	33.80	11 5/8	8	3/4	5 7/8
8	36.00	48.60	13 7/8	8	7/8	6 3/4
10	57.60	77.80	16 3/8	12	7/8	7 1/4

Walworth Kewanee All-Iron Malleable Flange Unions

Self-Seating Malleable Iron Ball Joint

Working Steam Pressure

Sizes 1″ to 4″.........300 Pounds
Sizes 5″ and 6″.......250 Pounds
Size 8″...............200 Pounds

Non-Shock Working Oil, Water or Gas Pressures, at Ordinary Air Temperatures

Sizes 1″ to 4″.........800 Pounds
Sizes 5″ and 6″.......500 Pounds
Size 8″...............400 Pounds

	Each					
Size Inches	No. 8302 Black	No. 8352 Galv.	Diameter Flanges Inches	Height Over All Inches	No. of Bolts	Size Bolts Inches
1	$1.60	$2.20	4	2 7/8	4	7/16
1 1/4	2.40	3.20	4 5/8	3 1/8	4	1/2
1 1/2	3.20	4.30	5	3 1/4	4	1/2
2	4.00	5.40	5 1/2	3 9/16	5	1/2
2 1/2	6.40	8.60	6 5/8	3 15/16	4	5/8
3	9.60	13.00	7 1/2	4 3/8	5	5/8
3 1/2	12.00	16.20	8 1/8	4 5/8	6	5/8
4	15.00	20.30	8 3/4	4 7/8	7	5/8
5	20.00	27.00	10 1/4	5 3/8	6	3/4
6	25.00	33.80	11 5/8	5 7/8	8	3/4
8	36.00	48.60	13 7/8	6 3/4	8	7/8

No. E-11872 McDonald Cast Iron Floor Flanges

Size Inches	Size Inches	Size Inches	Size Inches
1/4x3 1/2	3/4x4	1 x5	1 1/2x6
3/8x3 1/2	1 x4	1 1/4x5	2 x6
1/2x3 1/2	3/4x4 1/2	1 1/2x5	2 x7
3/4x3 1/2	1 x4 1/2	1 x6	2 1/4x9
1/2x4	1 1/4x4 1/2	1 1/4x6	3 x9

Walworth Cast Iron Floor Flanges

Pipe Size Inches	No. 1142 Black Each	No. 1542 Galv. Each	Pipe Size Inches	No. 1142 Black Each	No. 1542 Galv. Each
1/4x3	$.10	$.20	1 x4	$.16	$.32
3/8x3	.10	.20	1 1/4x4	.16	.32
1/2x3 1/2	.15	.30	1 1/2x4 1/2	.22	.44
3/4x3 1/2	.15	.30	2 x5 1/2	.35	.70

Malleable flanges can also be furnished.

Walworth Malleable Iron Ball Pattern Railing Fittings

No. 1 90° Elbows

Size In.	No. 7401 Black Each	No. 7451 Galv. Each
½	$.10	$.13
¾	.12	.15
1	.14	.18
1¼	.22	.29
1½	.30	.39
2	.44	.57

No. 3 Tees

Size In.	No. 7403 Black Each	No. 7453 Galv. Each
½	$.13	$.17
¾	.16	.21
1	.19	.25
1¼	.28	.36
1½	.40	.52
2	.57	.75

No. 6 Side Outlet Crosses

Size In.	No. 7406 Black Each	No. 7456 Galv. Each
½	$.32	$.42
¾	.38	.50
1	.46	.60
1¼	.70	.91
1½	1.00	1.30
2	1.45	1.90

No. 10 45° Elbows

Size In.	No. 7420 Black Each	No. 7470 Galv. Each
¾	$.15	$.20
1	.20	.26
1¼	.30	.39
1½	.40	.52
2	.65	.85
2½	1.40	1.85
3	2.50	3.25

No. 4 Side Outlet Tees

Size In.	No. 7404 Black Each	No. 7454 Galv. Each
½	$.25	$.33
¾	.31	.40
1	.37	.48
1¼	.57	.75
1½	.80	1.05
2	1.15	1.50

No. 7 Floor Flanges

Size In.	No. 7407 Black Each	No. 7457 Galv. Each
½	$.12	$.16
¾	.16	.21
1	.20	.26
1¼	.34	.44
1½	.50	.65
2	.80	1.05

No. 2 Side Outlet Elbows

Size In.	No. 7402 Black Each	No. 7452 Galv. Each
½	$.19	$.25
¾	.23	.30
1	.28	.36
1¼	.44	.57
1½	.60	.78
2	.88	1.15

No. 5 Crosses

Size In.	No. 7405 Black Each	No. 7455 Galv. Each
½	$.18	$.23
¾	.21	.27
1	.25	.33
1¼	.38	.49
1½	.53	.70
2	.77	1.00

No. 8 Ball Ornaments

Size In.	*No. 7408 Black Each	No. 7458 Galv. Each
½	$.12	$.16
¾	.16	.21
1	.20	.26
1¼	.28	.36
1½	.38	.50
2	.60	.78

*With left hand threads when ordered; no extra charge.

When ordering, specify size and number.

Fittings furnished with all openings tapped right hand, unless otherwise specified. Nos. 3, 4, 5 and 6 will be furnished with right and left threads on run, at no extra charge. Fittings other than above tapped right and left or left hand will be charged at an advance in price. Orders for fittings to be tapped special should be accompanied by a sketch.

Reamed for slip joints when specified at additional price; sketch showing openings to be reamed is required.

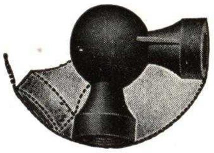
Walworth Malleable Iron Railing Fittings

Adjustable

By means of these fittings, almost any angle may be obtained in railings for stairs and other places requiring deviation from horizontal or perpendicular lines.

Regularly furnished tapped right hand.

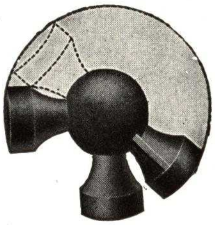
Elbows



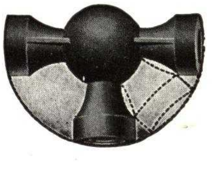
Size Inches	No. 7441 Black Each	No. 7491 Galv. Each
1	$1.10	$1.65
1¼	1.25	1.88
1½	1.70	2.55
2	2.25	3.38

Stair Tees

Size Inches	No. 7442 Black Each	No. 7492 Galv. Each
1	$1.30	$1.95
1¼	1.60	2.40
1½	2.15	3.23
2	2.50	3.75



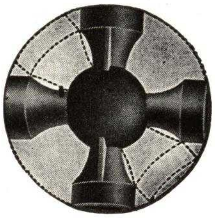
Tees



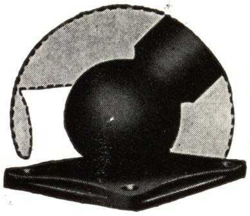
Size Inches	*No. 7443 Black Each	No. 7493 Galv. Each
1	$1.30	$1.95
1¼	1.50	2.25
1½	2.00	3.00
2	2.50	3.75

Crosses

Size Inches	*No. 7444 Black Each	No. 7494 Galv. Each
1	$1.50	$2.25
1¼	1.75	2.63
1½	2.35	3.53
2	2.75	4.13



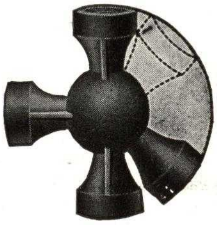
Flanges



Size Inches	No. 7445 Black Each	No. 7495 Galv. Each
1	$1.65	$2.48
1¼	1.75	2.63
1½	1.90	2.85
2	2.50	3.75

Stair Crosses

Size Inches	*No. 7446 Black Each	No. 7496 Galv. Each
1	$1.50	$2.25
1¼	1.85	2.78
1½	2.50	3.75
2	2.75	4.13



Can be furnished with side outlets, if desired. Prices upon application.

*Can be furnished with right and left threads on run at no extra charge.

Walworth Standard 125-Pound Cast Iron Screwed Fittings

125 Pounds Service Steam Pressure
175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

90°R.H. Elbows

Size Inches	No. 1101 Black Each	No. 1501 Galv. Each
¼	$.05	$.10
⅜	.05	.10
½	.06	.12
¾	.08	.16
1	.10½	.21
1¼	.16	.32
1½	.20	.40
2	.28	.56
2½	.50	1.00
3	.75	1.50
3½	1.05	2.10
4	1.20	2.40
5	2.00	4.00
6	2.75	5.50
8	6.75	13.50

90° Pitched Elbows

Size Inches	No. 1102 Black Each	No. 1502 Galv. Each
½	$.08	$.16
¾	.10	.20
1	.13	.26
1¼	.20	.40
1½	.25	.50
2	.35	.70

90° R.& L. Elbows

Size Inches	No. 1103 Black Each	No. 1503 Galv. Each
¾	$.09	$.18
1	.12	.24
1¼	.18	.36
1½	.23	.46
2	.32	.64

90° R.H. Reducing Elbows

Size Inches	No. 1104 Black Each	No. 1504 Galv. Each
½x ⅜	$.07	$.14
¾x ½	.09	.18
1 x ¾	.12	.24
1 x ½	.12	.24
1¼x1	.18	.36
1¼x ¾	.18	.36
1¼x ½	.18	.36

Continued

90° R.H. Reducing Elbows
Continued

Size Inches	No. 1104 Black Each	No. 1504 Galv. Each
1½x1¼	$.23	$.46
1½x1	.23	.46
1½x ¾	.23	.46
2 x1½	.32	.64
2 x1¼	.32	.64
2 x1	.32	.64
2 x ¾	.32	.64
2½x2	.60	1.20
2½x1½	.60	1.20
2½x1¼	.60	1.20
2½x1	.60	1.20
3 x2½	.85	1.70
3 x2	.85	1.70
3 x1½	.85	1.70
3 x1¼	.85	1.70
3½x3	1.20	2.40
4 x3½	1.40	2.80
4 x3	1.40	2.80
4 x2½	1.40	2.80
4 x2	1.40	2.80
5 x4	2.30	4.60
5 x3	2.30	4.60
5 x2½	2.30	4.60
6 x5	3.15	6.30
6 x4	3.15	6.30
6 x3	3.15	6.30
8 x6	7.75	15.50

90° Pitched Reducing Elbows

Size Inches	No. 1105 Black Each	No. 1505 Galv. Each
¾x ½	$.10	$.20
1 x ¾	.13	.26
1¼x1	.20	.40
2 x1½	.35	.70

45° Elbows

Size Inches	No. 1106 Black Each	No. 1506 Galv. Each
¼	$.06	$.12
⅜	.06	.12
½	.07	.14
¾	.10	.20
1	.12	.24
1¼	.19	.38
1½	.24	.48
2	.34	.68
2½	.60	1.20
3	.90	1.80
3½	1.25	2.50
4	1.45	2.90
5	2.50	5.00
6	3.45	6.90
8	8.50	17.00

Pitched elbows tapped so pipe will pitch ¼ inch per foot; marked with letter P on band.

Right and left hand elbows have ribs on band of end that is tapped left hand.

Dimensions of reducing sizes upon request.

90° reducing and pitched reducing elbows not carried in stock will be made to order by bushing in the sand from the nearest stock size and charged at reducing list price.

Walworth Standard 125-Pound Cast Iron Screwed Fittings

125 Pounds Service Steam Pressure
175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

Tees

Size Inches	No. 1110 Black Each	No. 1510 Galv. Each
¼	$.08	$.16
⅜	.08	.16
½	.09	.18
¾	.12	.24
1	.15	.30
1¼	.23	.46
1½	.29	.58
2	.41	.82
2½	.73	1.46
3	1.10	2.20
3½	1.50	3.00
4	1.75	3.50
5	3.00	6.00
6	4.00	8.00
8	9.75	19.50

Crosses

Size Inches	No. 1113 Black Each	No. 1513 Galv. Each
¾	$.22	$.44
1	.27	.54
1¼	.42	.84
1½	.53	1.06
2	.75	1.50
2½	1.30	2.60
3	2.00	4.00
4	3.15	6.30

Reducing Tees

Size Inches	No. 1111 Black Each	No. 1511 Galv. Each
½	$.10	$.20
¾	.14	.28
1	.17	.34
1¼	.27	.54
1½	.33	.66
2	.47	.94
2½	.83	1.66
3	1.25	2.50
3½	1.75	3.50
4	2.00	4.00
5	3.50	7.00
6	4.60	9.20
8	11.25	22.50

Y Branches

Size Inches	No. 1115 Black Each	No. 1515 Galv. Each
¾	$.28	$.56
1	.34	.68
1¼	.54	1.08
1½	.66	1.32
2	.94	1.88
2½	1.66	3.32
3	2.50	5.00
4	4.00	8.00
5	7.00	14.00
6	9.20	18.40
8	22.50	45.00
10	45.00	90.00

Dimensions of reducing sizes upon request.

Other than stock reductions can be made to order from straight sizes by bushing in sand.

Close Return Bends

Size In.	No. 1121 Black R.H. Each	No. 1521 Galv. R.H. Each	Ctr. to Ctr. In.
½	$.18	$.36	1¼
¾	.20	.40	1½
1	.22	.44	1¾
1¼	.28	.56	2¼
1½	.40	.80	2½
2	.57	1.14	3¼

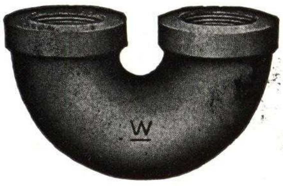
Will not make up parallel coils as distance, center to center of two adjacent bends, is greater than center to center openings of a single bend.

Walworth Standard 125-Pound Cast Iron Screwed Fittings

125 Pounds Service Steam Pressure

175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

Open Return Bends



Size In.	No. 1123 Black R.H. Each	No. 1523 Galv. R.H. Each	No. 1124 Black R.&L. Each	No. 1524 Galv. R.&L. Each	Ctr. to Ctr. In.
3/4	$.26	$.52	....	....	1 7/8
1	.30	.60	$.35	$.70	2 1/2
1 1/4	.40	.80	.46	.92	3
1 1/2	.55	1.10	.64	1.28	3 1/2
2	.80	1.60	....	....	4 1/2
2 1/2	1.35	2.70	....	....	5 1/2
3	2.20	4.40	....	....	6 1/2

Reducing Couplings

Size Inches	No. 1126 Black Each	No. 1526 Galv. Each	E. to E. In.
3/4 x 1/2	$.10	$.20	1 5/8
1 x 3/4	.16	.32	1 3/4
1 x 1/2	.16	.32	1 11/16
1 1/4 x 1	.22	.44	2 1/8
2 x 1 1/2	.43	.86	2 7/16
2 x 1 1/4	.43	.86	2 7/16
2 x 1	.43	.86	2 1/8
2 1/2 x 2	.60	1.20	2 11/16
3 x 2	.80	1.60	2 15/16
3 x 2 1/2	.80	1.60	2 15/16
4 x 2	1.35	2.70	2 13/16
4 x 2 1/2	1.35	2.70	3 1/16
4 x 3	1.35	2.70	3 3/8
5 x 4	2.00	4.00	3 1/4
6 x 4	2.70	5.40	3 1/4
6 x 5	2.70	5.40	3
8 x 6	6.75	13.50	4

Wide Return Bends

Size Inches	No. 1125 Black Each	No. 1525 Galv. Each	Ctr. to Ctr. In.
1	$.45	$.80	3
1	.50	.90	4
1 1/4	1.00	1.75	4
1 1/4	1.25	2.00	6
1 1/2	1.60	2.60	6
2	2.00	3.25	6

Walworth Cast Iron Caps

Size 2 inch and smaller, malleable iron.

Size...........inches	2 1/2	3	4	5	6	8
No. 1128, Black..each	$.40	$.54	$.87	$1.20	$1.55	$2.85
No. 1528, Galv...each	.80	1.08	1.74	2.40	3.10	5.70

Walworth Standard 125-Pound Cast Iron Plugs

125 Pounds Service Steam Pressure

175 Pounds Non-Shock Cold Oil, Water or Gas Pressure

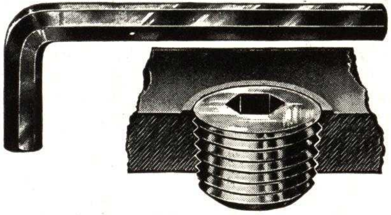
Square Head

Countersunk

	Square Head		Countersunk		Solid	
Size Inches	No. 1132 Black Each	No. 1532 Galv. Each	No. 1133 Black Each	No. 1533 Galv. Each	No. 1134 Black Each	No. 1534 Galv. Each
*1/8	....	....	....	....	$.02	$.04
*1/4	....	....	....	....	.02	.04
*3/8	....	....	....	....	.02	.04
1/2	$.02	$.04	$.04	$.08	.04	.08
3/4	.03	.06	.06	.12	.06	.12
1	.04	.08	.08	.16	.08	.16
1 1/4	.05	.10	.09	.18	.09	.18
1 1/2	.07	.14	.11	.22	.11	.22
2	.10	.20	.15	.30	.15	.30
2 1/2	.18	.36	.30	.60	.27	.54
3	.25	.50	.40	.80	.38	.76
3 1/2	.38	.76	.92	1.84	.57	1.14
4	.42	.84	1.10	2.20	.63	1.26
5	.88	1.75	....	....	1.35	2.70
6	1.20	2.40	....	....	1.80	3.60
8	2.75	5.50	....	....	....	....

*Machined from steel rod.

Allen Hex-Socket Pipe Plugs



Used by automobile and refrigerating engineers, engine builders, steam equipment manufacturers, etc. Also used in airplane motors. Made from special-analysis Allenoy steel and milled from the bar, cold-worked and heat-treated hexagon sockets are accurate, uniform and perfectly formed all the way down. Two keys furnished with each 100 plugs.

I.P.T.........in.	1/8	1/4	3/8	1/2	3/4	1
Per 100..........	$5.00	$7.00	$10.00	$12.00	$20.00	$30.00
Extra Keys..each	.05	.07	.10	.15	.35	.45

Also furnished in duralumin, bronze, brass, stainless steel or any other metal required. Sizes other than listed can be furnished. Prices on application.

Walworth Extra Heavy 250-Pound Cast Iron Screwed Fittings

250 Pounds Service Steam Pressure

400 Pounds Non-Shock Cold Oil, Water or Gas Pressure

90° Elbows

Size Inches	No. 1169 Black Ea.	No. 1569 Galv. Ea.
1/4	$.20	$.40
3/8	.20	.40
1/2	.25	.50
3/4	.30	.60
1	.35	.70
1 1/4	.45	.90
1 1/2	.60	1.20
2	.75	1.50
2 1/2	1.25	2.50
3	2.00	4.00
3 1/2	2.75	5.50
4	3.50	7.00
5	5.50	11.00
6	8.00	16.00
8	17.00	34.00

Tees

Size Inches	No. 1172 Black Ea.	No. 1572 Galv. Ea.
1/4	$.35	$.70
3/8	.35	.70
1/2	.40	.80
3/4	.45	.90
1	.55	1.10
1 1/4	.70	1.40
1 1/2	.90	1.80
2	1.15	2.30
2 1/2	1.80	3.60
3	3.00	6.00
3 1/2	4.25	8.50
4	5.50	11.00
5	8.25	16.50
6	12.00	24.00
8	25.00	50.00

45° Elbows

Size Inches	No. 1171 Black Ea.	No. 1571 Galv. Ea.
1/2	$.35	$.70
3/4	.40	.80
1	.44	.88
1 1/4	.55	1.10
1 1/2	.70	1.40
2	.90	1.80
2 1/2	1.50	3.00
3	2.50	5.00
3 1/2	3.50	7.00
4	4.50	9.00
5	6.75	13.50
6	9.75	19.50
8	21.00	42.00

Reducing Tees

Size Inches	No. 1173 Black Each	No. 1573 Galv. Each
3/4	$.60	$1.20
1	.70	1.40
1 1/4	.90	1.80
1 1/2	1.15	2.30
2	1.40	2.80

Reducing 45° elbows can be made to order from straight sizes by bushing in the sand.

Walworth Hexagon Bushings

Outside Hexagon
Reducing 1 or 2 sizes to 5 in.; reducing 1 size on 6 and 8-in. sizes.

Inside Hexagon
Reducing 3 or more sizes to 5 in.; reducing 2 sizes on 6 and 8-in. sizes.

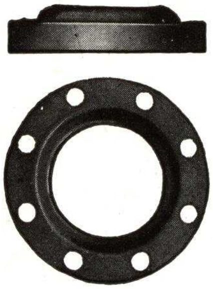
	Outside		Inside	
Size In.	No. 1130 Black Each	No. 1530 Galv. Each	No. 1131 Black Each	No. 1531 Galv. Each
* ¼	$.04	$.08	....	....
* ⅜	.04	.08	....	....
* ½	.04	.08	....	....
† ¾	.05	.10	....	....
†1	.06	.12	$.06	$.12
†1¼	.07	.14	.07	.14
†1½	.09	.18	.09	.18
†2	.14	.28	.14	.28
†2½	.21	.42	.21	.42
3	.30	.60	.30	.60
3½	.40	.80	.40	.80
4	.50	1.00	.50	1.00
5	.93	1.85	.93	1.85
6	1.25	2.50	1.25	2.50
8	2.75	5.50	2.75	5.50

*Steel †Malleable iron, if reducing 1 size only.

Walworth Face Bushings

Size Inches	No. 7146 Black Each	No. 7546 Galv. Each	Size Inches	No. 7146 Black Each	No. 7546 Galv. Each
¼	$.08	$.12	2½	$.48	$.72
⅜	.08	.12	3	.70	1.05
½	.09	.14	3½	1.20	1.80
¾	.11	.17	4	1.50	2.25
1	.13	.20	5	2.60	3.90
1¼	.17	.25	6	3.75	5.60
1½	.22	.33	8	9.00	13.50
2	.32	.48	..	....	.....

Template for Drilling 125-Pound Flanged Cast Iron Valves and Fittings



No. 530

These drilling templates are in multiples of four so that fittings may be turned to face in any quarter when being installed, bolt holes straddle the center line unless otherwise ordered. Can be drilled to any other template.

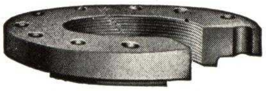
For bolts smaller than 1¾-inch diameter, bolt holes are drilled ⅛ inch larger than diameter of bolt. For bolts 1¾-inch diameter and larger, bolt holes are drilled ¼ inch larger than diameter of bolt.

Size In.	Diam. Flanges In.	Thickness Flanges In.	Bolt Circle In.	No. Bolts	Size Bolts In.	Bolt Lengths In.
1	4¼	7/16	3⅛	4	½	1¾
1¼	4⅝	½	3½	4	½	2
1½	5	9/16	3⅞	4	½	2
2	6	⅝	4¾	4	⅝	2¼
2½	7	11/16	5½	4	⅝	2½
3	7½	¾	6	4	⅝	2½
3½	8½	13/16	7	8	⅝	2¾
4	9	15/16	7½	8	⅝	3
5	10	15/16	8½	8	¾	3
6	11	1	9½	8	¾	3¼
8	13½	1⅛	11¾	8	¾	3½
10	16	1 3/16	14¼	12	⅞	3¾
12	19	1¼	17	12	⅞	3¾
14	21	1⅜	18¾	12	1	4¼
16	23½	1 7/16	21¼	16	1	4½
18	25	1 9/16	22¾	16	1⅛	4¾
20	27½	1 11/16	25	20	1⅛	5
24	32	1⅞	29½	20	1¼	5½
30	38¾	2⅛	36	28	1¼	6¼
36	46	2⅜	42¾	32	1½	7
42	53	2⅝	49½	36	1½	7½
48	59½	2¾	56	44	1½	7¾
54	66¼	3	62¾	44	1¾	*10½
60	73	3⅛	69¼	52	1¾	*10¾
72	86½	3½	82½	60	1¾	*11½
84	99¾	3⅞	95½	64	2	*12¾
96	113¼	4¼	108½	68	2¼	*14

*Bolt studs with 2 nuts.

125-Pound Cast Iron Flanges

Working Pressures
1 to 12-Inch—125 Pounds Steam
14 to 24-Inch—100 Pounds Steam
1 to 12-Inch—175 Pounds Cold Water, Oil or Gas, Non-Shock
14 to 24-Inch—150 Pounds Cold Water, Oil or Gas, Non-Shock



No. 522 Companion Smooth Face

Companion Flange Rear View, Showing Hub

No. 524 Blind or Solid

Furnished faced and drilled unless ordered faced only.

Companion Flanges				Blind or Solid Flanges			
Size Inches	Faced Only Each	Faced and Drilled Each	Bolt Circle Inches	Size Inches	Faced Only Each	Faced and Drilled Each	Bolt Circle Inches
1 x 4¼	$.55	$.80	3⅛	1 x 4¼	$.85	$1.10	3⅛
1¼x 4⅝	.60	.85	3½	1¼x 4⅝	.90	1.15	3½
1½x 5	.65	.90	3⅞	1½x 5	1.00	1.25	3⅞
2 x 6	.75	1.00	4¾	2 x 6	1.15	1.40	4¾
2½x 7	.85	1.10	5½	2½x 7	1.30	1.55	5½
3 x 7½	.95	1.25	6	3 x 7½	1.40	1.70	6
3½x 8½	1.20	1.55	7	3½x 8½	1.80	2.15	7
4 x 9	1.35	1.80	7½	4 x 9	2.00	2.45	7½
5 x10	1.60	2.05	8½	5 x10	2.40	2.85	8½
6 x11	2.00	2.50	9½	6 x11	3.00	3.50	9½
8 x13½	3.10	3.80	11¾	8 x13½	4.60	5.30	11¾
10 x16	4.50	5.50	14¼	10 x16	6.75	7.75	14¼
12 x19	6.50	7.65	17	12 x19	9.75	10.90	17
1400x21	9.00	10.35	18¾	14 x21	13.50	14.85	18¾
1600x23½	13.50	15.30	21¼	16 x23½	20.00	21.80	21¼
1800x25	16.00	18.00	22¾	18 x25	24.00	26.00	22¾
2000x27½	19.00	21.50	25	20 x27½	28.00	30.50	25
2400x32	27.00	30.50	29½	24 x32	40.00	43.50	29½

Extra for spot-facing bolt holes, 10 cents per hole.

125-Pound Cast Iron Reducing Flanges

125 Pounds Steam Working Pressure
175 Pounds Non-Shock Cold Water, Oil or Gas Working Pressure

No. 529

Used in connection with straight or reducing fittings. Always the same thickness as the regular companion flanges of corresponding outside diameter, and drilled to the template corresponding to the outside diameter, unless otherwise ordered.

Customers who desired fittings reduced in this manner will please specify: Reduce by flanges if necessary.

Companion flanges are furnished faced and drilled unless ordered faced only. Spot facing bolt holes, 10 cents per hole.

When ordering reducing flanges, the screwed or reduced size should be designated first, and then the outside diameter of the flange.

Standard Dimensions

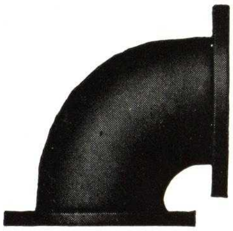
Size Pipe In.	O.D. Flge. In.	Size Pipe In.	O.D. Flge. In.	Size Pipe In.	O.D. Flge. In.	Size Pipe In.	O.D. Flge. In.
1	4¼	2	6	3½	8½	6	11
1¼	4⅝	2½	7	4	9	8	13½
1½	5	3	7½	5	10	10	16

Prices

Size Inches	Faced Only Each	Faced and Drilled Each	Size Inches	Faced Only Each	Faced and Drilled Each	Size Inches	Faced Only Each	Faced and Drilled Each
1 x5	$1.15	$1.40	2 x11	$3.30	$3.80	4x10	$2.65	$3.10
1 x6	1.30	1.55	2½x 7½	1.55	1.85	4x11	3.30	3.80
1¼x6	1.30	1.55	2½x 9	2.20	2.65	4x13½	5.10	5.80
1½x6	1.30	1.55	2½x11	3.30	3.80	5x11	3.30	3.80
1½x7	1.45	1.70	3 x 8½	2.00	2.35	5x13½	5.10	5.80
1½x7½	1.55	1.85	3 x 9	2.20	2.65	6x13½	5.10	5.80
1½x9	2.20	2.65	3 x10	2.65	3.10	6x16	7.45	8.45
2 x7	1.45	1.70	3 x11	3.30	3.80	8x16	7.45	8.45
2 x7½	1.55	1.85	3 x13½	5.10	5.80	8x19	10.75	11.90
2 x9	2.20	2.65	3½x 9	2.20	2.65	10x19	10.75	11.90

125-Pound Cast Iron Flanged Fittings

90° Elbows



No. 500

Size In.	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each
1½	$3.00	$3.60	$2.40
2	3.00	3.60	2.40
2½	3.15	3.75	2.50
3	3.45	4.15	2.75
3½	4.05	4.90	3.25
4	4.50	5.50	3.65
5	6.25	7.25	4.85
6	7.60	8.90	6.00
8	12.00	13.60	9.00
10	19.00	21.70	14.50
12	28.00	31.00	21.00
14	41.50	45.25	30.00
16	54.50	59.50	40.00
18	71.00	77.00	.....
20	90.00	97.00	.....
24	140.00	150.00	.....

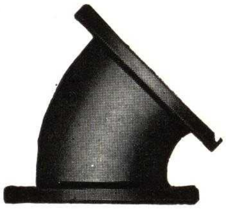
Reducing 90° Elbows

2	$6.00	$6.60	$2.40
2½	6.30	6.90	2.50
3	6.90	7.60	2.75
4	9.00	10.00	3.65
5	12.50	13.50	4.85
6	15.25	16.55	6.00
8	24.00	25.60	9.00
10	38.00	40.70	14.50
12	56.00	59.00	21.00
14	70.00	73.75	30.00
16	90.00	95.00	40.00

Long Radius Elbows

2	$5.00	$5.90	$3.60
2½	5.25	6.15	3.75
3	5.75	6.85	4.15
3½	6.75	8.00	4.90
4	7.50	9.00	5.50
5	10.50	12.00	7.25
6	12.65	14.60	9.00
8	20.00	22.40	13.50
10	31.50	35.50	22.00
12	46.50	51.00	31.00
14	69.00	74.50	45.00
16	91.00	98.50	60.00
18	118.00	127.00	.....
20	150.00	160.00	.....
24	235.00	250.00	.....

45° Elbows



No. 501

Size In.	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each
1½	$3.30	$3.90	$2.40
2	3.30	3.90	2.40
2½	3.50	4.10	2.50
3	3.80	4.50	2.75
3½	4.50	5.35	3.25
4	5.00	6.00	3.65
5	6.90	7.90	4.85
6	8.35	9.65	6.00
8	12.60	14.20	9.00
10	20.00	22.70	14.50
12	29.50	32.50	21.00
14	41.50	45.25	30.00
16	54.50	59.50	40.00
18	71.00	77.00	.....
20	90.00	97.00	.....
24	140.00	150.00	.....

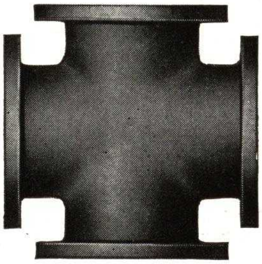
Taper Reducers

2½	$6.30	$6.90	$2.50
3	6.90	7.60	2.75
3½	8.10	8.95	3.25
4	9.00	10.00	3.65
5	12.50	13.50	4.85
6	15.25	16.55	6.00
8	24.00	25.60	9.00
10	38.00	40.70	14.50
12	56.00	59.00	21.00
14	70.00	73.75	30.00
16	90.00	95.00	40.00

Base Elbows

	Faced Except Base Flange Each	Faced and Drilled Except Base Flange Each	Facing and Drilling Base Flange Each	Extra for Galvanizing Each
4	$9.00	$10.00	$3.00	$5.50
5	12.50	13.50	3.50	7.25
6	15.25	16.55	3.50	9.00
8	24.00	25.60	5.00	13.50
10	38.00	40.70	5.00	22.00
12	56.00	59.00	7.50	31.00

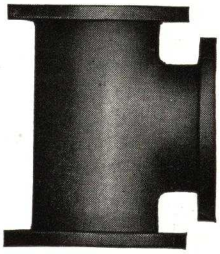
Crosses and Laterals



No. 517, Cross

Size In.	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each
2	$6.75	$7.95	$4.80
2½	6.95	8.15	5.00
3	7.65	9.05	5.50
4	10.00	12.00	7.25
5	13.75	15.75	9.75
6	16.75	19.25	12.00
8	26.50	29.75	18.00
10	42.00	47.50	29.00
12	61.50	67.50	42.00

Tees



No. 509

Size Inches	Faced Only Each	Faced and Drilled Each	Extra for Galv. Each
1½	$4.35	$5.25	$3.60
2	4.35	5.25	3.60
2½	4.55	5.45	3.75
3	5.00	6.10	4.15
3½	5.85	7.10	4.90
4	6.50	8.00	5.50
5	9.10	10.60	7.25
6	11.00	12.95	9.00
8	17.40	19.80	13.50
10	27.50	31.50	22.00
12	40.50	45.00	31.00
14	60.00	65.50	45.00
16	79.00	86.50	60.00
18	103.00	112.00	.....
20	130.00	140.00	.....
24	203.00	218.00	.....

Reducing Tees

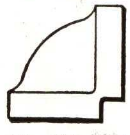
2	$5.00	$5.90	$3.60
2½	5.25	6.15	3.75
3	5.75	6.85	4.15
4	7.50	9.00	5.50
5	10.50	12.00	7.25
6	12.65	14.60	9.00
8	20.00	22.40	13.50
10	31.50	35.50	22.00
12	46.50	51.00	31.00
14	69.00	74.50	45.00

Fittings have plain faces. Furnished faced and drilled unless ordered faced only. Base flange of base elbow is not furnished faced nor drilled unless order so states. Size of all fittings scheduled indicates i.d. of ports.

Sizes 16 inches and smaller not spot faced. When ordered, there is an extra charge of 10 cents per hole. Sizes 18 inches and larger regularly spot faced. Larger sizes made to order.

Cast Iron Screwed Drainage Fittings

Elbows



†No. 375—90°

Sizes 1¼ to 10 in.

No. 376—60°

Sizes 1¼ to 6 in.

No. 377—45°

Sizes 1¼ to 10 in.

No. 378—22½°

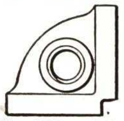
Sizes 1¼ to 4 in.

No. 379—11¼°

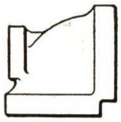
Sizes 1¼ to 4 in.

Size Inches	Black Each	Galv. Each
1¼	$.30	$.52
1½	.38	.67
2	.57	1.00
2½	1.20	2.10
3	1.45	2.55
4	2.30	4.00
5	4.25	7.40
6	6.25	11.00
8	15.00	26.25
10	31.00	54.00
*1½x1¼	.57	1.00
*2 x1½	.85	1.50

90° Elbows



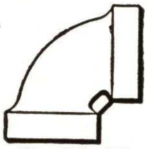
No. 380—with 2-Inch Side Outlet



No. 381—with 2-Inch Heel Outlet

4	$3.85	$6.75

Long Turn Elbows



†No. 382—90°

Sizes 1¼ to 6 in.

No. 383—45°

Sizes 1¼ to 6 in.

No. 384—90°
Extra Long Turn

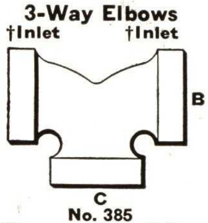
Sizes 1¼ to 4 in.

1¼	$.35	$.60
1½	.42	.72
2	.65	1.15
2½	1.40	2.45
3	1.75	3.10
4	2.75	4.80
5	5.25	9.20
6	7.50	13.15

*No. 375 only.

†Pitched ¼-inch per foot.

3-Way Elbows

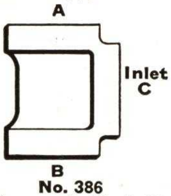


No. 385

Size Inches	Black Each	Galv. Each
1¼	$.75	$1.25
1½	.85	1.50
2	1.10	1.95
A B C		
1¼x1¼x1½	.95	1.65
1½x1½x2	1.20	2.10

Inlets pitched ¼-in. per ft.

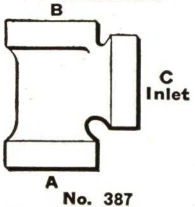
Tees



No. 386

1¼	$.45	$.80
1½	.55	1.00
2	.80	1.40
2½	1.50	2.50
3	2.00	3.50
4	3.25	5.70
A B C		
1½x1½x1¼	.60	1.10
2x2x1½	.90	1.60
2x2x1¼	.90	1.60
2½x2½x2	1.65	2.75
3x3x2	2.20	3.85
3x3x1½	2.20	3.85
4x4x3	3.60	6.30
4x4x2	3.60	6.30

90° Tee Pattern Y-Branches

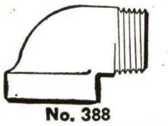


No. 387

1¼	$.45	$.80
1½	.57	1.00
2	.85	1.50
2½	1.80	3.15
3	2.20	3.85
4	3.50	6.15
5	6.50	11.35
6	9.50	16.50
A B C		
1½x1½x1¼	.63	1.10
1½x1¼x1¼	.63	1.10
2x2x1½	.95	1.65
2x2x1¼	.95	1.65
2x1½x2	.95	1.65
2x1½x1½	.95	1.65
2½x2½x2	2.00	3.50
3x3x2	2.40	4.20
3x3x1½	2.40	4.20
3x3x1¼	2.40	4.20
4x4x3	3.85	6.75
4x4x2	3.85	6.75
4x4x1½	3.85	6.75
5x5x4	7.15	12.50
6x6x5	10.50	18.50
6x6x4	10.50	18.50

Inlet pitched ¼-in. per ft.

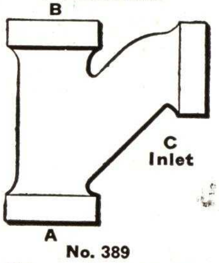
90° Street Elbows



No. 388

Size Inches	Black Each	Galv. Each
1¼	$.35	.60
1½	.40	.70
2	.60	1.10

90° Long Turn Tee Pattern Y-Branches

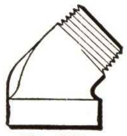


No. 389

1¼	$.57	$1.00
1½	.70	1.22
2	1.10	1.95
2½	2.40	4.20
3	3.35	5.85
4	6.00	10.50
A B C		
1½x1½x1¼	.80	1.40
2x2x1½	1.20	2.10
2x2x1¼	1.20	2.10
2x1½x2	1.20	2.10
2½x2½x2	2.65	4.65
3x3x2½	3.75	6.55
3x3x2	3.75	6.55
3x3x1½	3.75	6.55
4x4x3	6.60	11.55
4x4x2	6.60	11.55
4x4x1½	6.60	11.55

Inlet pitched ¼-inch per foot.

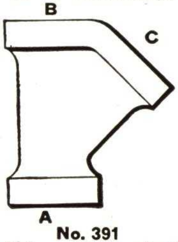
45° Street Elbows



No. 390

1¼	$.35	$.60
1½	.40	.70
2	.60	1.10

45° Y-Branches



No. 391

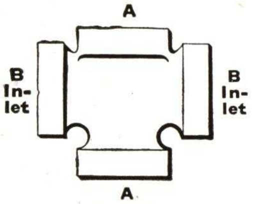
1¼	$.52	$.90
1½	.65	1.15
2	.95	1.65
2½	2.10	3.70
3	2.65	4.65
4	3.85	6.75
5	7.10	12.50
6	10.50	18.50
8	25.00	44.00
10	52.00	91.00

45° Y-Branches

No. 391

Size Inches	Black Each	Galv. Each
A B C		
1½x1½x1¼	$.72	$1.25
2x2x1½	1.05	1.85
2x2x1¼	1.05	1.85
2x1½x1½	1.05	1.85
2½x2½x2	2.30	4.00
2½x2½x1½	2.30	4.00
3x3x2½	2.90	5.10
3x3x2	2.90	5.10
3x3x1½	2.90	5.10
4x4x3	4.25	7.40
4x4x2	4.25	7.40
4x4x1½	4.25	7.40
5x5x4	7.80	13.65
6x6x5	11.50	20.00
6x6x4	11.50	20.00
8x8x6	27.50	48.00
8x8x4	27.50	48.00

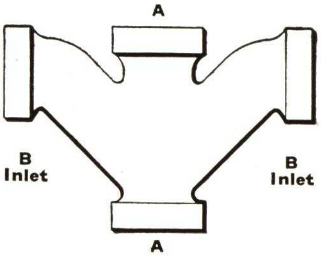
90° Double Tee Pattern Y-Branches



No. 392

1¼	$.70	$1.22
1½	.85	1.50
2	1.30	2.30
3	3.40	5.95
4	5.25	9.20
A B		
1½x1¼	.95	1.65
2 x1½	1.50	2.60
2 x1¼	1.50	2.60
3 x2	3.75	6.55
3 x1½	3.75	6.55
4 x2	5.75	10.00
4 x1½	5.75	10.00

90° Double Long Turn Tee Pattern Y-Branches

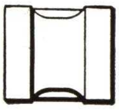


No. 393

1¼	$1.00	$1.75
1½	1.10	1.95
2	1.75	3.10
3	5.00	8.75
4	9.00	15.75
A B		
1½x1¼	1.25	2.25
2 x1½	1.90	3.35
2 x1¼	1.90	3.35
3 x2	5.50	9.65

Inlets pitched ¼-inch per foot.

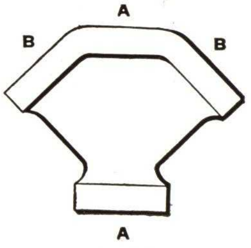
Couplings



No. 394

Size Inches	Black Each	Galv. Each
1¼	$.70	$1.25
1½	.80	1.40
2	.90	1.60
2½	1.20	2.10
3	1.50	2.60
4	2.50	4.40
5	4.00	7.00
6	6.00	10.50
8	10.00	17.50

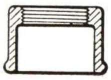
45° Double Y-Branches



No. 395

1¼	$.90	$1.60
1½	1.00	1.75
2	1.45	2.55
2½	3.25	5.70
3	4.00	7.00
4	5.75	10.00
A B		
2x1½	1.60	2.80
3x2	4.40	7.70

Roof Connections

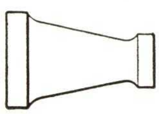


No. 396

1½	$1.10	$1.90
2	1.15	2.00
3	1.20	2.10
4	1.50	2.60

With straight threads.

Increasers



No. 397

2x1½	$1.75	$3.00
3x3	2.50	4.40
4x3	3.75	6.55
4x2	3.75	6.55
5x4	5.50	9.65
6x5	6.50	11.35
6x4	6.50	11.35

Seamless Steel Welding Fittings

These seamless welding elbows and returns have a uniform wall thickness, with A.S.A. tolerances, at all points throughout the fittings. The uniform wall thickness is maintained by a process that prevents stretching or thinning of the outer wall.

When pipe and fittings agree in outside diameter, inside diameter, and wall thicknesses, alignment from the outside brings them into perfect alignment at the inside also. This is the case when welding fittings are used as illustrated in Fig. 1 below.

In the illustration below, Fig. 2, the fitting has a somewhat thicker wall than the pipe. When lined up from the outside, an offset is made inside the joint, causing a harmful irregularity in the inside surface, impeding the smooth flow lines.

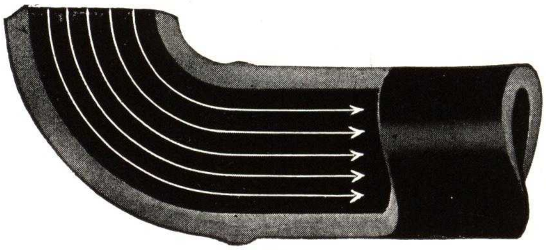


Fig. 1

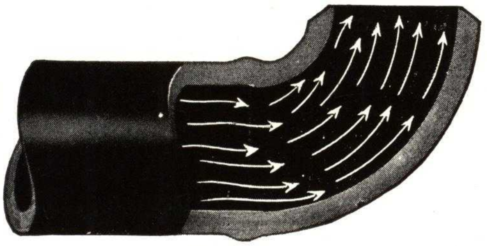


Fig. 2

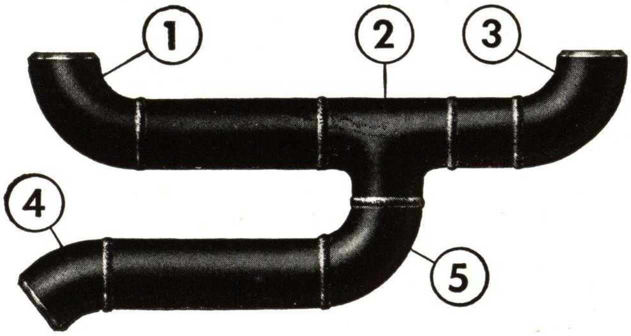
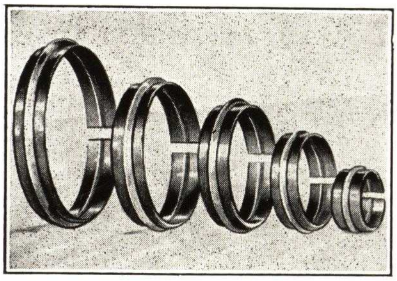


Fig. 3

Fig. 3, above, illustrates a typical assembly that can be fabricated on the ground, then installed in the system with only three welds. Note the single 45-degree (No. 4) and three 90-degree elbows (Nos. 1, 3, 5), and the straight tee (No. 2).

Welding Rings



			Standard No. 2500			Extra Strong No. 2502		
Nom. Size In.	Width In.	Thickness In.	Each	For Pipe with I.D. In.	Approx. Wt. Lb. per 100	Each	For Pipe with I.D. In.	Approx. Wt. Lb. per 100
¾	⅜	.042	**$.10**	.824	1½	**$.10**	.742	1¼
1	½	.042	**.10**	1.049	2½	**.10**	.957	2¼
1¼	½	.042	**.10**	1.380	3¼	**.10**	1.278	3
1½	½	.042	**.13**	1.610	3½	**.13**	1.500	3¼
2	⅝	.049	**.13**	2.067	5½	**.13**	1.939	5¼
2½	⅝	.049	**.15**	2.469	7½	**.15**	2.323	7
3	⅝	.049	**.20**	3.068	10	**.20**	2.900	9¼
3½	⅝	.065	**.25**	3.548	11¼	**.25**	3.364	11
4	13/16	.065	**.25**	4.026	23¼	**.25**	3.826	22¾
5	13/16	.083	**.45**	5.047	38¼	**.45**	4.813	37¾
6	13/16	.083	**.65**	6.065	45	**.65**	5.761	43¾
8	13/16	.083	**.85**	7.981	55½	**.85**	7.625	54¼
10	13/16	.083	**.90**	10.020	68½	**.90**	9.750	67¼
12	13/16	.083	**.95**	12.000	87½	**.95**	11.750	85

Rings for pipe other than standard or extra heavy (heaviest card weight) are priced at 35 per cent above the nominal size.

Welding Heads

Ellipsoidal in form and made from open hearth mild steel plate.

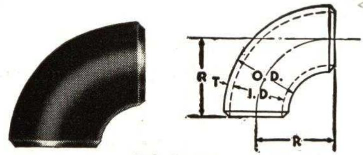
Ends are beveled 37½ degrees for welding, with 1/16-inch straight face.

			Standard Pipe Thickness No. 2510			Extra Strong Pipe Thickness No. 2520		
Nominal Pipe Size In.	O.D. In.	Lgth. Over-all In.	Each	Thickness Wall In.	Approx. Wt. Lb.	Each	Thickness Wall In.	Approx. Wt. Lb.
1	1.315	1½	**$1.70**	.133	⅕	**$2.10**	.179	¼
1¼	1.660	1½	**1.70**	.140	¼	**2.10**	.191	¼
1½	1.900	1½	**1.70**	.145	⅜	**2.10**	.200	⅜
2	2.375	1½	**1.85**	.154	½	**2.25**	.218	¾
2½	2.875	1½	**2.00**	203	1	**2.50**	.276	1
3	3.500	2	**2.40**	.216	1½	**3.30**	.300	1¾
3½	4.000	2½	**3.20**	.226	2	**4.25**	.318	2¾
4	4.500	2½	**3.70**	.237	2½	**4.90**	.337	3¼
5	5.563	3	**4.90**	.258	4½	**5.85**	.375	5½
6	6.625	3½	**5.95**	.280	6½	**7.50**	.432	9¼
8	8.625	4	**10.10**	.322	11⅞	**12.20**	.500	16¾
10	10.750	5	**14.60**	.365	22	**18.50**	.500	26¾
12	12.750	6	**20.85**	.375	30¾	**25.00**	.500	38
***14**	14.000	6½	**24.00**	.375	36⅞	**30.00**	.500	47
***16**	16.000	7	**28.00**	.375	40	**34.50**	.500	53½
***18**	18.000	8	**32.00**	.375	54	**38.50**	.500	72
***20**	20.000	9	**35.50**	.375	77	**45.00**	.500	86
***24**	24.000	10½	**41.75**	.375	92	**49.00**	.500	129½

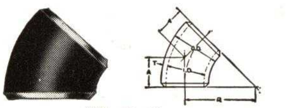
*Outside diameter.

Plus 11%

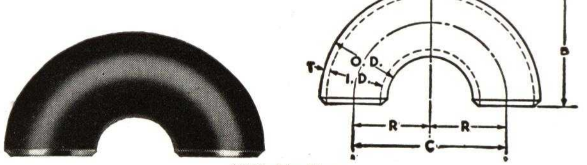
Seamless Steel Welding Fittings



90°, Radius



45°, Radius



180°, Radius

*Long Radius—Standard Pipe Thickness

Nom. Pipe Size In.	Outside Diameter Inches	Inside Diameter Inches	T, Wall Thick. In.	90°, No. 2000 Each	90°, No. 2000 R Ctr. to Face In.	90°, No. 2000 Approx. Weight Pounds	45°, No. 2010 Each	45°, No. 2010 A Ctr. to Face In.	45°, No. 2010 R Radius Inches	45°, No. 2010 Approx. Weight Pounds	180°, No. 2020 Each	180°, No. 2020 C Ctr. to Ctr. In.	180°, No. 2020 B Back to Face In.	180°, No. 2020 Approx. Weight Pounds
½	.840	.622	.109	$1.00	1½	⅛	$.90	⅝	1½	1/16	$2.20	3	1⅞	¼
¾	1.050	.824	.113	1.00	1⅛	3/16	.90	7/16	1⅛	1/16	2.20	2¼	1 11/16	⅓
1	1.315	1.049	.133	1.20	1½	⅜	1.08	⅞	1½	¼	2.65	3	2 3/16	¾
1¼	1.660	1.380	.140	1.40	1⅞	½	1.26	1	1⅞	⅓	3.10	3¾	2¾	1
1½	1.900	1.610	.145	1.70	2¼	¾	1.53	1⅛	2¼	⅜	3.75	4½	3¼	1½
2	2.375	2.067	.154	2.10	3	1½	1.90	1⅜	3	¾	4.65	6	4 3/16	3
2½	2.875	2.469	.203	3.40	3¾	3	3.05	1¾	3¾	1½	7.50	7½	5 3/16	6
3	3.500	3.068	.216	4.90	4½	4½	4.40	2	4½	2¼	10.80	9	6¼	9
3½	4.000	3.548	.226	6.35	5¼	6¼	5.70	2¼	5¼	3⅛	14.00	10½	7¼	12½
4	4.500	4.026	.237	7.65	6	8½	6.90	2½	6	4¼	17.00	12	8¼	17
5	5.563	5.047	.258	10.85	7½	14¼	9.80	3⅛	7½	7¼	23.90	15	10 5/16	28½
6	6.625	6.065	.280	15.80	9	23	14.25	3¾	9	11½	34.80	18	12 5/16	46
8	8.625	7.981	.322	30.00	12	45	27.00	5	12	22½	66.00	24	16 5/16	90
10	10.750	10.020	.365	53.40	15	78	48.00	6¼	15	39	117.50	30	20⅜	156
12	12.750	12.000	.375	80.70	18	118	72.75	7½	18	59	177.50	36	24⅜	236
14 O.D.	14.000	13.250	.375	120.00	21	147	108.00	8 11/16	21	74	264.00	42	28	294
16 O.D.	16.000	15.250	.375	175.00	24	202	158.00	9 15/16	24	101	385.00	48	32	404
18 O.D.	18.000	17.250	.375	235.00	27	256	212.00	11 3/16	27	128	517.00	54	36	512
20 O.D.	20.000	19.250	.375	270.00	30	310	245.00	12 7/16	30	155	594.00	60	40	617
24 O.D.	24.000	23.250	.375	340.00	36	446	315.00	14 15/16	36	223	748.00	72	48	886
30 O.D.	30.000	29.250	.375	......	....	.....	510.00	12 7/16	30	233	......	....	....	.....

*Long Radius—Extra Strong Pipe Thickness

Nom. Pipe Size In.	Outside Diameter Inches	Inside Diameter Inches	T, Wall Thick. In.	90°, No. 2030 Each	90°, No. 2030 R	90°, No. 2030 Approx. Weight	45°, No. 2040 Each	45°, No. 2040 A	45°, No. 2040 R	45°, No. 2040 Approx. Weight	180°, No. 2050 Each	180°, No. 2050 C	180°, No. 2050 B	180°, No. 2050 Approx. Weight
¾	1.050	.742	.154	$1.50	1⅛	⅓	$1.35	7/16	1⅛	3/16	......	....	....	.....
1	1.315	.957	.179	1.50	1½	½	1.35	⅞	1½	¼	$3.30	3	2 3/16	1
1¼	1.660	1.278	.191	1.75	1⅞	¾	1.60	1	1⅞	⅜	3.85	3¾	2¾	1½
1½	1.900	1.500	.200	2.15	2¼	1	1.95	1⅛	2¼	½	4.75	4½	3¼	2
2	2.375	1.939	.218	2.65	3	2	2.40	1⅜	3	1	5.85	6	4 3/16	4
2½	2.875	2.323	.276	4.25	3¾	3¼	3.80	1¾	3¾	1⅝	9.35	7½	5 3/16	7½
3	3.500	2.900	.300	6.15	4½	6	5.55	2	4½	3	13.55	9	6¼	12
3½	4.000	3.364	.318	7.95	5¼	8½	7.15	2¼	5¼	4¾	17.60	10½	7¼	17
4	4.500	3.826	.337	9.55	6	11¾	8.60	2½	6	5⅞	21.00	12	8¼	23½
5	5.563	4.813	.375	13.55	7½	20	12.20	3⅛	7½	10	29.70	15	10 5/16	40
6	6.625	5.761	.432	19.75	9	33½	17.80	3¾	9	16¾	43.50	18	12 5/16	67
8	8.625	7.625	.500	37.50	12	69	33.75	5	12	34	82.50	24	16 5/16	138
10	10.750	9.750	.500	67.00	15	107½	60.50	6¼	15	53	147.40	30	20⅜	215
12	12.750	11.750	.500	101.00	18	150	91.00	7½	18	74	222.20	36	24⅜	300
14 O.D.	14.000	13.000	.500	150.00	21	188	135.00	8 11/16	21	95	330.00	42	28	376
16 O.D.	16.000	15.000	.500	219.00	24	262	197.00	9 15/16	24	131	482.00	48	32	524
18 O.D.	18.000	17.000	.500	294.00	27	338	265.00	11 3/16	27	170	647.00	54	36	676
20 O.D.	20.000	19.000	.500	340.00	30	409	310.00	12 7/16	30	205	748.00	60	40	824
24 O.D.	24.000	23.000	.500	410.00	36	591	370.00	14 15/16	36	295	902.00	72	48	1183
30 O.D.	30.000	29.000	.500	......	....	.....	600.00	12 7/16	30	309	......	....	....	......

†Short Radius

	Standard Pipe Thickness										Extra Strong Pipe Thickness									
				90°, No. 2060			180°, No. 2070							90°, No. 2080			180°, No. 2090			
Nom. Pipe Size In.	O.D. In.	I.D. In.	T, Wall Thick. In.	Each	R Ctr. to Face, In.	Approx. Wt. Lb.	Each	C Ctr.to Ctr. In.	B Back to Face, In.	Approx. Wt. Lb.	O.D. In.	I.D. In.	T, Wall Thick. In.	Each	R Ctr. to Face, In.	Approx. Wt. Lb.	Each	C Ctr. to Ctr. In.	B Back to Face, In.	Approx. Wt. Lb.
1	1.315	1.049	.133	$1.20	1	¼	$2.40	2	1⅝	½	......	......	....	......	....	.....	......	..	....	.....
1¼	1.660	1.380	.140	1.40	1¼	⅜	2.80	2½	2 1/16	¾	......	......	....	......	....	.....	......	..	....	.....
1½	1.900	1.610	.145	1.70	1½	½	3.40	3	2 7/16	1	1.900	1.500	.200	$2.15	1½	¾	$4.30	3	2 7/16	1½
2	2.375	2.067	.154	2.10	2	⅞	4.20	4	3 3/16	1¾	2.375	1.939	.218	2.65	2	1½	5.30	4	3 3/16	3
2½	2.875	2.469	.203	3.40	2½	1¾	6.85	5	3 15/16	3½	2.875	2.323	.276	4.25	2½	2¼	8.40	5	3 15/16	4½
3	3.500	3.068	.216	4.90	3	3	9.80	6	4¾	6	3.500	2.900	.300	6.15	3	3¾	12.30	6	4¾	7½
3½	4.000	3.548	.226	6.35	3½	4	12.70	7	5½	8	4.000	3.364	.318	7.95	3½	5½	15.90	7	5½	11
4	4.500	4.026	.237	7.65	4	6	15.30	8	6¼	12	4.500	3.826	.337	9.55	4	7¾	19.00	8	6¼	15½
5	5.563	5.047	.258	10.85	5	9½	21.70	10	7¾	19	5.563	4.813	.375	13.55	5	13½	27.00	10	7¾	27
6	6.625	6.065	.280	15.80	6	15½	31.60	12	9 5/16	31	6.625	5.761	.432	19.75	6	22½	39.50	12	9 5/16	45
8	8.625	7.981	.322	30.00	8	31	60.00	16	12 5/16	62	8.625	7.625	.500	37.50	8	46	75.00	16	12 5/16	92
10	10.750	10.020	.365	53.40	10	55	106.80	20	15⅜	110	10.750	9.750	.500	67.00	10	71	134.00	20	15⅜	142
12	12.750	12.000	.375	80.70	12	78	161.40	24	18⅜	156	12.750	11.750	.500	101.00	12	100	202.00	24	18⅜	200
14 O.D.	14.000	13.250	.375	120.00	14	104	240.00	28	21	208	14.000	13.000	.500	150.00	14	132	300.00	28	21	264
16 O.D.	16.000	15.250	.375	175.00	15	118	350.00	30	23	236	16.000	15.000	.500	219.00	15	160	438.00	30	23	320
18 O.D.	18.000	17.250	.375	235.00	16½	148	470.00	33	25½	296	18.000	17.000	.500	294.00	16½	194	588.00	33	25½	388
20 O.D.	20.000	19.250	.375	270.00	20½	210	540.00	41	30½	420	20.000	19.000	.500	340.00	20½	280	680.00	41	30½	560
24 O.D.	24.000	23.250	.375	340.00	22	288	680.00	44	34	576	24.000	23.000	.500	410.00	22	370	820.00	44	34	740
30 O.D.	30.000	29.250	.375	565.00	30	465	1130.00	60	45	931	30.000	29.000	.500	665.00	30	618	1330.00	60	45	1236

*The center line Radius of Long-Radius is full one and one-half times the nominal pipe size.
†Center line radius of Standard Radius is one times nominal pipe size.

Seamless Steel Welding Tees

Welding tees are made from wrought steel seamless pipe to standard, extra strong, and o.d. pipe sizes. Standard weight and extra strong weight tees conform to standard and extra strong weight pipe respectively in diameter and wall thickness. Carbon, molybdenum and other alloys furnished on special order. Order by number and size.

Nom. Pipe Size In.	Straight		Red. Outlet		Wall Thickness Inches	
	Standard No. 2100 Each	**Extra Strong No. 2102** Each	**Standard No. 2104** Each	**Extra Strong No. 2106** Each	Standard	Extra Strong
¾	**$2.15**	**$2.15**	**$2.70**	**$2.70**	.113	.154
1	**2.15**	**2.15**	**2.70**	**2.70**	.133	.179
1¼	**2.90**	**2.90**	**3.60**	**3.60**	.140	.191
1½	**3.65**	**3.65**	**4.55**	**4.55**	.145	.200
2	**5.00**	**5.00**	**6.25**	**6.25**	.154	.218
2½	**7.30**	**7.30**	**9.10**	**9.10**	.203	.276
3	**9.50**	**12.00**	**11.85**	**15.00**	.216	.300
3½	**12.50**	**16.00**	**15.60**	**20.00**	.226	.318
4	**13.00**	**17.00**	**16.25**	**21.25**	.237	.337
5	**24.00**	**30.00**	**30.00**	**37.50**	.258	.375
6	**28.00**	**35.00**	**35.00**	**43.75**	.280	.432
8	**45.00**	**58.00**	**56.25**	**72.50**	.322	.500
10	**76.00**	**97.00**	**95.00**	**120.00**	.365	.500
12	**110.00**	**135.00**	**137.50**	**168.00**	.375	.500
14 O.D.	**165.00**	**205.00**	**165.00**	**205.00**	.375	.500
16 O.D.	**200.00**	**255.00**	**200.00**	**255.00**	.375	.500
18 O.D.	**245.00**	**320.00**	**245.00**	**320.00**	.375	.500
20 O.D.	**295.00**	**355.00**	**295.00**	**355.00**	.375	.500
24 O.D.	**380.00**	**490.00**	**380.00**	**490.00**	.375	.500

Dimensions

Nom. Pipe Size In.	Outlet Size In.	C.L. to End Run In.	C.L. to End Branch In.
¾	⅜	1⅛	1⅛
	½	1⅛	1⅛
	¾	1⅛	1⅛
1	⅜	1½	1½
	½	1½	1½
	¾	1½	1½
	1	1½	1½
1¼	½	1⅞	1⅞
	¾	1⅞	1⅞
	1	1⅞	1⅞
	1¼	1⅞	1⅞
1½	½	2¼	2¼
	¾	2¼	2¼
	1	2¼	2¼
	1¼	2¼	2¼
	1½	2¼	2¼
2	¾	2½	1¾
	1	2½	2
	1¼	2½	2¼
	1½	2½	2⅜
	2	2½	2½
2½	1	3	2¼
	1¼	3	2½
	1½	3	2⅝
	2	3	2¾
	2½	3	3
3	1	3⅜	2⅝
	1¼	3⅜	2¾
	1½	3⅜	2⅞
	2	3⅜	3
	2½	3⅜	3¼
	3	3⅜	3⅜
3½	1½	3¾	3⅛
	2	3¾	3¼
	2½	3¾	3½
	3	3¾	3⅝
	3½	3¾	3¾
4	1½	4⅛	3⅜
	2	4⅛	3½
	2½	4⅛	3¾
	3	4⅛	3⅞
	3½	4⅛	4
	4	4⅛	4⅛
5	2	4⅞	4⅛
	2½	4⅞	4¼
	3	4⅞	4⅜
	3½	4⅞	4½
	4	4⅞	4⅝
	5	4⅞	4⅞
6	2½	5⅝	4¾
	3	5⅝	4⅞
	3½	5⅝	5
	4	5⅝	5⅛
	5	5⅝	5⅜
	6	5⅝	5⅝
8	3	7	6
	3½	7	6
	4	7	6⅛
	5	7	6⅜
	6	7	6⅝
	8	7	7
10	4	8½	7¼
	5	8½	7½
	6	8½	7⅝
	8	8½	8
	10	8½	8½
12	5	10	8½
	6	10	8⅝
	8	10	9
	10	10	9½
	12	10	10
14O.D.	6	7	8¼
	8	9	8¼
	10	10	8¼
	12	10½	8¼
	14	12½	8¼
16O.D.	6	7	9¼
	8	9	9¼
	10	10	9¼
	12	10½	9¼
	14	12½	9¼
	16	14½	9¼
18O.D.	8	9	10¼
	10	10	10¼
	12	10½	10¼
	14	12½	10¼
	16	14½	10¼
	18	16½	10¼
20O.D.	8	9	11⅜
	10	10	11⅜
	12	10½	11⅜
	14	12½	11⅜
	16	14½	11⅜
	18	16½	11⅜
	20	18½	11⅜
24O.D.	10	10	13½
	12	10½	13½
	14	12½	13½
	16	14½	13½
	18	16½	13½
	20	18½	13½
	24	22½	13½

Seamless Steel Welding Reducers

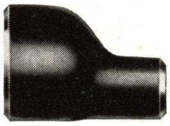
Concentric Type

Standard Pipe Thickness— No. 2110
Extra Strong Pipe Thickness— No. 2120

Eccentric Type

Standard Pipe Thickness— No. 2130
Extra Strong Pipe Thickness— No. 2104

Concentric Type



Eccentric Type

Nominal Pipe Size Inches	**Standard** Each	**Extra Strong** Each	Overall Length Inches	Weight, Pounds Standard	Weight, Pounds Extra Strong
1 x ¾	**$1.50**	**$2.75**	2	⅜	½
1 x ½	**1.50**	**2.75**	2	⅜	½
1 x ⅜	**1.50**	**2.75**	2	⅜	½
1¼ x 1	**2.00**	**3.50**	2	⅜	⅝
1¼ x ¾	**2.00**	**3.50**	2	⅜	⅝
1¼ x ½	**2.50**	**4.50**	2	⅜	⅝
1½ x 1¼	**2.00**	**3.50**	2½	½	¾
1½ x 1	**2.00**	**3.50**	2½	½	¾
1½ x ¾	**2.50**	**4.50**	2½	½	¾
1½ x ½	**2.50**	**4.50**	2½	½	¾
2 x 1½	**2.25**	**3.75**	3	¾	1¼
2 x 1¼	**2.25**	**3.75**	3	¾	1¼
2 x 1	**2.25**	**3.75**	3	¾	1¼
2 x ¾	**2.75**	**4.75**	3	¾	1¼
2½ x 2	**2.50**	**4.50**	3½	1½	2
2½ x 1½	**2.75**	**5.00**	3½	1½	2
2½ x 1¼	**2.75**	**5.00**	3½	1½	2
2½ x 1	**2.75**	**5.00**	3½	1½	2
3 x 2½	**3.00**	**5.25**	3½	2	2¾
3 x 2	**3.00**	**5.25**	3½	2	2¾
3 x 1½	**3.25**	**5.70**	3½	2	2½
3 x 1¼	**3.25**	**5.70**	3½	2	2½
3½ x 3	**3.50**	**6.00**	4	3	4
3½ x 2½	**3.50**	**6.00**	4	2¾	3½
3½ x 2	**3.50**	**6.00**	4	2¾	3½
3½ x 1½	**3.75**	**6.50**	4	2½	3¼
3½ x 1¼	**3.75**	**6.50**	4	2½	3¼
4 x 3½	**4.00**	**7.00**	4	3½	4¾
4 x 3	**4.00**	**7.00**	4	3½	4¾
4 x 2½	**4.00**	**7.00**	4	3¼	4¾
4 x 2	**4.00**	**7.00**	4	3	4¾
4 x 1½	**4.50**	**8.00**	4	3	4¾
5 x 4	**6.00**	**10.50**	5	6	8¼
5 x 3½	**6.50**	**11.50**	5	5¾	7¾
5 x 3	**6.50**	**11.50**	5	5½	7½
5 x 2½	**6.50**	**11.50**	5	5¼	7
5 x 2	**6.50**	**11.50**	5	5	6½
6 x 5	**8.00**	**14.00**	5½	8½	12
6 x 4	**8.00**	**14.00**	5½	8¼	11½
6 x 3½	**9.00**	**15.75**	5½	8¼	11
6 x 3	**9.00**	**15.75**	5½	8	10½
6 x 2½	**9.00**	**15.75**	5½	7¼	10
8 x 6	**12.00**	**26.25**	6	13¼	18¾
8 x 5	**15.00**	**30.60**	6	12	18
8 x 4	**15.00**	**30.60**	6	11	17
8 x 3½	**15.00**	**30.60**	6	10	16½
10 x 8	**18.00**	**40.00**	7	22	29½
10 x 6	**20.00**	**44.00**	7	21½	29½
10 x 5	**26.00**	**48.00**	7	21	28
10 x 4	**26.00**	**48.00**	7	20	25½
12 x10	**32.00**	**56.00**	8	28	36
12 x 8	**36.00**	**63.00**	8	25	34½
12 x 6	**36.00**	**63.00**	8	24¼	34
12 x 5	**40.00**	**70.00**	8	23	33½
14 x12	**40.00**	**70.00**	13	60	80
14 x10	**40.00**	**70.00**	13	60	80
14 x 8	**45.00**	**78.75**	13	60	80
14 x 6	**50.00**	**87.50**	13	60	80
16 x14	**70.00**	**105.00**	14	70	90
16 x12	**70.00**	**105.00**	14	70	90
16 x10	**80.00**	**122.50**	14	70	90
16 x 8	**85.00**	**140.00**	14	70	90
18 x16	**85.00**	**148.00**	15	85	115
18 x14	**85.00**	**148.00**	15	85	115
18 x12	**95.00**	**166.00**	15	85	115
18 x10	**105.00**	**184.00**	15	85	115
20 x18	**90.00**	**157.50**	20	125	170
20 x16	**90.00**	**157.50**	20	125	170
20 x14	**100.00**	**175.00**	20	125	170
20 x12	**100.00**	**175.00**	20	125	170
24 x20	**140.00**	**245.00**	20	150	200
24 x18	**155.00**	**270.00**	20	150	200
24 x16	**170.00**	**295.00**	20	150	200

Ends agree in o.d., i.d., and wall thickness with pipe they are to match.

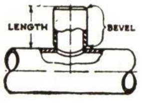
Lap Joint Stub Ends

Seamless Steel

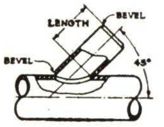
Has a square lap of the same thickness as the pipe wall. Order by No.

Nominal Pipe Size In.	No. 2150 Standard Each	No. 2150 Standard Pipe Wall and Lap Thickness In.	No. 2150 Standard Approx. Wt. Lb.	No. 2155 Extra Strong Each	No. 2155 Extra Strong Pipe Wall and Lap Thickness In.	No. 2155 Extra Strong Approx. Wt. Lb.	Lgth. In.	Diam. In.	Radius In.
1	$3.55	.133	⅝	$3.80	.179	1	4	2	⅛
1¼	4.00	.140	1	4.25	.191	1⅓	4	2½	3⁄16
1½	4.45	.145	1⅕	4.70	.200	1½	4	2⅞	¼
2	5.75	.154	2¼	6.25	.218	3	6	3⅝	5⁄16
2½	6.50	.203	3½	7.15	.276	4½	6	4⅛	5⁄16
3	7.30	.216	4⅝	8.25	.300	6¼	6	5	⅜
3½	8.10	.226	5½	9.40	.318	7½	6	5½	⅜
4	9.30	.237	6¾	10.90	.337	9	6	6 3⁄16	7⁄16
5	10.75	.258	10¾	13.50	.375	16½	8	7 5⁄16	7⁄16
6	12.75	.280	16 3⁄16	16.35	.432	22½	8	8½	½
8	16.00	.322	25½	24.00	.500	34½	8	10⅝	½
10	22.75	.365	40	35.75	.500	52	10	12¾	½
12	30.75	.375	47	48.75	.500	64½	10	15	½
14 OD	53.00	.375	61	72.00	.500	83	12	16¼	½
16 OD	72.00	.375	74¼	93.00	.500	94½	12	18½	½
18 OD	92.00	.375	85¼	114.00	.500	108	12	21	½
20 OD	113.00	.375	95½	136.00	.500	138	12	23	½
24 OD	138.00	.375	126	162.00	.500	167	12	27¼	½

Seamless Steel Shaped Welding Nipples



90°



45°

Used in welding risers or branches from a main or header. Templates eliminated, as nipple itself is used for marking cut in header. Both ends properly beveled; and shaped ends formed to follow contour of header pipe.

Nom. Pipe Size In.	Shaped to Fit Headers Sizes, In.	Lgth. In.	90° to Header No. 2200 Std. Wt. Each	90° to Header No. 2200 Std. Wt. Approx. Wt. Lb.	90° to Header No. 2210 Extra Strong Each	90° to Header No. 2210 Extra Strong Wt. Lb.	45° to Header No. 2220 Std. Wt. Each	45° to Header No. 2220 Std. Wt. Approx. Wt. Lb.	45° to Header No. 2230 Extra Strong Each	45° to Header No. 2230 Extra Strong Wt. Lb.
1¼	1¼–16	6	$.70	1¼	$.90	1½	$.80	1¼	$.95	1½
1½	1½–16	6	.80	1½	1.05	2	.85	1½	1.15	2
2	2 –16	6	.95	2	1.25	2½	1.05	2¼	1.40	3
2½	2½–16	6	1.20	3	1.70	4	1.35	3½	1.95	4½
3	3 –20	6	1.50	4	2.25	5½	1.80	5	2.65	6½
3½	3½–20	6	1.85	5	2.50	6½	2.30	6	3.10	8
4	4 –24	6	2.20	6	2.75	8	2.75	7	3.50	10
5	5 –24	8	3.70	10½	5.00	15	4.70	13	6.40	18
6	6 –24	8	4.50	14	6.75	21	6.00	18	9.00	26
8	8 –24	8	7.50	22	11.50	33	10.25	29	15.50	43
10	10 –24	10	12.00	39	18.50	53	17.00	51	26.00	69
12	12 –24	10	15.75	50	23.50	65	23.00	66	35.00	87

Lapped Forged Steel Flanges

Available in 150-pound to 1500-pound standards. Made on special order from carbon molybdenum and other alloys.

150 Pound Amer. Std.—No. 2160

Nom. Pipe Size, In.	Each	Diam. Flange In.	Thick. Flange In.	Overall Height In.	Diam. Bore In.	Radius In.	Approx. Weight Pounds
½	$8.00	3½	7⁄16	⅝	0.90	⅛	1
¾	8.00	3⅞	½	⅝	1.11	⅛	1½
1	8.00	4¼	9⁄16	11⁄16	1.38	⅛	2
1¼	9.00	4⅝	⅝	13⁄16	1.72	3⁄16	2½
1½	10.00	5	11⁄16	⅞	1.96	¼	3
2	11.00	6	¾	1	2.46	5⁄16	5
2½	13.00	7	⅞	1⅛	2.97	5⁄16	8
3	15.00	7½	15⁄16	1 3⁄16	3.60	⅜	9
3½	19.00	8½	15⁄16	1¼	4.10	⅜	11
4	20.00	9	15⁄16	1 5⁄16	4.60	7⁄16	12
5	24.00	10	15⁄16	1 7⁄16	5.66	7⁄16	13
6	27.00	11	1	1 9⁄16	6.72	½	18
8	35.00	13½	1⅛	1¾	8.78	½	28
10	48.00	16	1 3⁄16	1 15⁄16	10.91	½	37
12	60.00	19	1¼	2 3⁄16	12.90	½	60
14 O.D.	80.00	21	1⅜	3⅛	14.17	½	81
16 O.D.	100.00	23½	1 7⁄16	3 7⁄16	16.19	½	103
18 O.D.	125.00	25	1 9⁄16	3 13⁄16	18.19	½	146
20 O.D.	150.00	27½	1 11⁄16	4 1⁄16	20.19	½	185
24 O.D.	240.00	32	1⅞	4⅜	24.19	½	260

300 Pound Amer. Std.—No. 2170

Nom. Pipe Size, In.	Each	Diam. Flange In.	Thick. Flange In.	Overall Height In.	Diam. Bore In.	Radius In.	Approx. Weight Pounds
½	$8.00	3¾	9⁄16	⅞	0.90	⅛	1½
¾	8.00	4⅝	⅝	1	1.11	⅛	2½
1	8.00	4⅞	11⁄16	1 1⁄16	1.38	⅛	3
1¼	9.00	5¼	¾	1 1⁄16	1.72	3⁄16	4½
1½	10.00	6⅛	13⁄16	1 3⁄16	1.96	¼	6½
2	11.00	6½	⅞	1 5⁄16	2.46	5⁄16	7
2½	13.00	7½	1	1½	2.97	5⁄16	10
3	15.00	8¼	1⅛	1 11⁄16	3.60	⅜	13
3½	19.00	9	1 3⁄16	1¾	4.10	⅜	16
4	20.00	10	1¼	1⅞	4.60	7⁄16	21
5	24.00	11	1⅜	2	5.66	7⁄16	26
6	27.00	12½	1 7⁄16	2 1⁄16	6.72	½	35
8	35.00	15	1⅝	2 7⁄16	8.78	½	54
10	48.00	17½	1⅞	3¾	10.91	½	91
12	60.00	20½	2	4	12.90	½	139
14 O.D.	80.00	23	2⅛	4⅜	14.17	½	189

Continued

300 Pound Amer. Std.—No. 2170

Concluded

Nom. Pipe Size, In.	Each	Diam. Flange In.	Thick. Flange In.	Overall Height In.	Diam. Bore In.	Radius In.	Approx. Weight Pounds
16 O.D.	$100.00	25½	2¼	4¾	16.19	½	240
18 O.D.	125.00	28	2⅜	5⅛	18.19	½	305
20 O.D.	150.00	30½	2½	5½	20.19	½	375
24 O.D.	240.00	36	2¾	6	24.19	½	530

*400 Pound Amer. Std.—No. 2180

Nom. Pipe Size, In.	Each	Diam. Flange In.	Thick. Flange In.	Overall Height In.	Diam. Bore In.	Radius In.	Approx. Weight Pounds
4	$20.00	10	1⅜	2	4.60	7⁄16	22
5	24.00	11	1½	2⅛	5.66	7⁄16	29
6	27.00	12½	1⅝	2¼	6.72	½	37
8	35.00	15	1⅞	2 11⁄16	8.78	½	59
10	48.00	17½	2⅛	4	10.91	½	95
12	60.00	20½	2¼	4¼	12.90	½	152
14 O.D.	80.00	23	2⅜	4⅝	14.17	½	210
16 O.D.	100.00	25½	2½	5	16.19	½	280
18 O.D.	125.00	28	2⅝	5⅜	18.19	½	345
20 O.D.	150.00	30½	2¾	5¾	20.19	½	420
24 O.D.	240.00	36	3	6¼	24.19	½	615

600 Pound Amer. Std.—No. 2190

Nom. Pipe Size, In.	Each	Diam. Flange In.	Thick. Flange In.	Overall Height In.	Diam. Bore In.	Radius In.	Approx. Weight Pounds
½	$9.50	3¾	9⁄16	⅞	0.90	⅛	2
¾	9.50	4⅝	⅝	1	1.11	⅛	3
1	10.00	4⅞	11⁄16	1 1⁄16	1.38	⅛	3½
1¼	10.75	5¼	13⁄16	1⅛	1.72	3⁄16	4½
1½	11.75	6⅛	⅞	1¼	1.96	¼	6½
2	13.00	6½	1	1 7⁄16	2.46	5⁄16	8
2½	15.00	7½	1⅛	1⅝	2.97	5⁄16	11
3	18.50	8¼	1¼	1 13⁄16	3.60	⅜	14
3½	22.50	9	1⅜	1 15⁄16	4.10	⅜	20
4	33.00	10¾	1½	2⅛	4.60	7⁄16	31
5	46.00	13	1¾	2⅜	5.66	7⁄16	63
6	55.00	14	1⅞	2⅝	6.72	½	78
8	80.00	16½	2 3⁄16	3	8.78	½	112
10	125.00	20	2½	4⅜	10.91	½	195
12	150.00	22	2⅝	4⅝	12.90	½	240
14 O.D.	180.00	23¾	2¾	5	14.17	½	290
16 O.D.	240.00	27	3	5½	16.19	½	400
18 O.D.	300.00	29¼	3¼	6	18.19	½	469
20 O.D.	360.00	32	3½	6½	20.19	½	604
24 O.D.	540.00	37	4	7¼	24.19	½	866

Flanges furnished faced, drilled, and spot faced or back faced. Flanges available with hubs of slipon flange dimensions.

*For sizes 3½-inch and smaller, use 600-pound Amer. Std.

Forged Steel Flanges

Screwed and Slip-On Welding

Screwed Flange

Slip-on Flange

Threaded companion flanges (screwed) are forged from selected steel and are accurately machined.

Slip-on flanges are sometimes used in place of welding neck flanges. Flanges are bored to slip over pipe.

Flanges are furnished faced, drilled and spot faced or back faced. Made on special order from carbon molybdenum and other alloys.

150-Pound American Standard

No. 2240, Screwed **No. 2250, Slip-On Welding**

Nom. Pipe Size In.	Each	Diam. Flange In.	Diam. Raised Face In.	Thickness Flange In.	Height Over-all In.	Approx. Weight Lb.
½	$8.00	3½	1⅜	7/16	⅝	1
¾	8.00	3⅞	1 11/16	½	⅝	1½
1	8.00	4¼	2	9/16	11/16	2
1¼	9.00	4⅝	2½	⅝	13/16	2½
1½	10.00	5	2⅞	11/16	⅞	3
2	11.00	6	3⅝	¾	1	5
2½	13.00	7	4⅛	⅞	1⅛	8
3	15.00	7½	5	15/16	1 3/16	9
3½	19.00	8½	5½	15/16	1¼	11
4	20.00	9	6 3/16	15/16	1 5/16	12
5	24.00	10	7 5/16	15/16	1 7/16	13
6	27.00	11	8½	1	1 9/16	18
8	35.00	13½	10⅝	1⅛	1¾	28
10	48.00	16	12¾	1 3/16	1 15/16	37
12	60.00	19	15	1¼	2 3/16	60
14 O.D.	80.00	21	16¼	1⅜	2¼	77
16 O.D.	100.00	23½	18½	1 7/16	2½	93
18 O.D.	125.00	25	21	1 9/16	2 11/16	120
20 O.D.	150.00	27½	23	1 11/16	2⅞	155
24 O.D.	240.00	32	27¼	1⅞	3¼	210

300-Pound American Standard

No. 2260, Screwed **No. 2270, Slip-On Welding**

½	$8.00	3¾	1⅜	9/16	⅞	1½
¾	8.00	4⅝	1 11/16	⅝	1	2½
1	8.00	4⅞	2	11/16	1 1/16	3
1¼	9.00	5¼	2½	¾	1 1/16	4½
1½	10.00	6⅛	2⅞	13/16	1 3/16	6½
2	11.00	6½	3⅝	⅞	1 5/16	7
2½	13.00	7½	4⅛	1	1½	10
3	15.00	8¼	5	1⅛	1 11/16	13
3½	19.00	9	5½	1 3/16	1¾	16
4	20.00	10	6 3/16	1¼	1⅞	21
5	24.00	11	7 5/16	1⅜	2	26
6	27.00	12½	8½	1 7/16	2 1/16	35
8	35.00	15	10⅝	1⅝	2 7/16	54
10	48.00	17½	12¾	1⅞	2⅝	77
12	60.00	20½	15	2	2⅞	110
14 O.D.	80.00	23	16¼	2⅛	3	164
16 O.D.	100.00	25½	18½	2¼	3¼	220
18 O.D.	125.00	28	21	2⅜	3½	280
20 O.D.	150.00	30½	23	2½	3¾	325
24 O.D.	240.00	36	27¼	2¾	4 3/16	490

400-Pound American Standard

No. 2280, Screwed **No. 2290, Slip-On Welding**

Nom. Pipe Size In.	Each	Diam. Flange In.	Diam. Raised Face In.	Thickness Flange In.	Height Over-all In.	Approx. Weight Lb.
4	$20.00	10	6 3/16	1⅜	2	24
5	24.00	11	7 5/16	1½	2⅛	31
6	27.00	12½	8½	1⅝	2¼	39
8	35.00	15	10⅝	1⅞	2 11/16	63
10	48.00	17½	12¾	2⅛	2⅞	91
12	60.00	20½	15	2¼	3⅛	129
14 O.D.	80.00	23	16¼	2⅜	3 5/16	191
16 O.D.	100.00	25½	18½	2½	3 11/16	253
18 O.D.	125.00	28	21	2⅝	3⅞	310
20 O.D.	150.00	30½	23	2¾	4	378
24 O.D.	240.00	36	27¼	3	4½	539

Not made in sizes 3½-inch and smaller. For these sizes use 600-pound American Standard.

600-Pound American Standard

No. 2300, Screwed **No. 2310, Slip-On Welding**

½	$9.50	3¾	1⅜	9/16	⅞	2
¾	9.50	4⅝	1 11/16	⅝	1	3
1	10.00	4⅞	2	11/16	1 1/16	3½
1¼	10.75	5¼	2½	13/16	1⅛	4½
1½	11.75	6⅛	2⅞	⅞	1¼	6½
2	13.00	6½	3⅝	1	1 7/16	8
2½	15.00	7½	4⅛	1⅛	1⅝	12
3	18.50	8¼	5	1¼	1 13/16	15
3½	22.50	9	5½	1⅜	1 15/16	21
4	33.00	10¾	6 3/16	1½	2⅛	33
5	46.00	13	7 5/16	1¾	2⅜	63
6	55.00	14	8½	1⅞	2⅝	80
8	80.00	16½	10⅝	2 3/16	3	97
10	125.00	20	12¾	2½	3⅜	177
12	150.00	22	15	2⅝	3⅝	215
14 O.D.	180.00	23¾	16¼	2¾	3 11/16	259
16 O.D.	240.00	27	18½	3	4 3/16	366
18 O.D.	300.00	29¼	21	3¼	4⅝	476
20 O.D.	360.00	32	23	3½	5	612
24 O.D.	540.00	37	27¼	4	5½	876

Forged Steel Flanges

Blind Flanges

Nom. Pipe Size In.	150-Pound No. 2320		300-Pound No. 2330		400-Pound No. 2340		600-Pound No. 2350	
	Each	Approx. Wt. Lb.	Each	Approx. Wt. Lb.	Each	Approx. Wt. Lb.	Each	Approx. Wt. Lb.
½	$11.50	2	$11.50	2	*	*	$11.50	2
¾	11.50	2	11.50	3	*	*	11.50	3
1	11.50	2	11.50	4	*	*	11.50	4
1¼	11.50	3	11.50	6	*	*	11.50	6
1½	11.50	3	11.50	7	*	*	11.50	8
2	12.60	4	12.60	8	*	*	12.60	10
2½	14.70	7	14.70	12	*	*	14.70	15
3	17.05	9	17.05	16	*	*	17.05	20
3½	21.65	13	21.65	21	*	*	21.65	29
4	23.70	17	23.70	27	$23.70	33	40.00	41
5	28.20	20	28.20	35	28.20	44	56.00	68
6	31.60	26	31.60	50	31.60	61	66.00	86
8	42.00	45	42.00	81	42.00	100	96.00	139
10	58.00	70	58.00	127	58.00	155	150.00	231
12	76.00	110	76.00	184	76.00	226	180.00	295
14 O.D.	126.00	131	126.00	236	126.00	310	216.00	378
16 O.D.	147.00	170	147.00	307	147.00	398	288.00	527
18 O.D.	210.00	209	210.00	390	210.00	502	360.00	665
20 O.D.	252.00	272	252.00	492	252.00	621	432.00	855
24 O.D.	320.00	411	320.00	754	320.00	936	648.00	1175

Reducing Flanges—Screwed and Slip-On

Bored, Faced, Drilled, and Spot Faced

Screwed

Slip-On

150-Pound
No. 2360 Screwed
No. 2370 Slip-On

Size Inches	Each
1 x 6	$21.00
1¼x 6	21.00
1½x 6	21.00
1½x 7	24.50
2 x 7	24.50
1½x 7½	28.00
2 x 7½	28.00
2½x 7½	28.00
2 x 8½	35.00
2½x 8½	35.00
3 x 8½	35.00
2 x 9	37.00
2½x 9	37.00
3 x 9	37.00
2 x10	44.00
2½x10	44.00
3 x10	44.00
3½x10	44.00
4 x10	44.00
2 x11	49.00
2½x11	49.00
3 x11	49.00
3½x11	49.00
4 x11	49.00
5 x11	49.00
3 x13½	63.00
3½x13½	63.00
4 x13½	63.00
5 x13½	63.00
6 x13½	63.00
3½x16	86.00
4 x16	86.00
5 x16	86.00
6 x16	86.00
8 x16	86.00
5 x19	108.00
6 x19	108.00
8 x19	108.00
10 x19	108.00

300-Pound
No. 2380 Screwed
No. 2390 Slip-On

Size Inches	Each
1 x 6½	$21.00
1¼x 6½	21.00
1½x 6½	21.00
1½x 7½	24.50
2 x 7½	24.50
1½x 8¼	28.00
2 x 8¼	28.00
2½x 8¼	28.00
2 x 9	35.00
2½x 9	35.00
3 x 9	35.00
2 x10	37.00
2½x10	37.00
3 x10	37.00
2 x11	44.00
2½x11	44.00
3 x11	44.00
3½x11	44.00
4 x11	44.00
2 x12½	49.00
2½x12½	49.00
3 x12½	49.00
3½x12½	49.00
4 x12½	49.00
5 x12½	49.00
3 x15	63.00
3½x15	63.00
4 x15	63.00
5 x15	63.00
6 x15	63.00
3½x17½	86.00
4 x17½	86.00
5 x17½	86.00
6 x17½	86.00
8 x17½	86.00
6 x20½	108.00
8 x20½	108.00
10 x20½	108.00

400-Pound
No. 2400 Screwed
No. 2410 Slip-On

Size Inches	Each
For Flange Diameters Smaller Than 10-Inch Use 600-Pound Flanges	
2 x10	$37.00
2½x10	37.00
3 x10	37.00
2 x11	44.00
2½x11	44.00
3 x11	44.00
3½x11	44.00
4 x11	44.00
2 x12½	49.00
2½x12½	49.00
3 x12½	49.00
3½x12½	49.00
4 x12½	49.00
5 x12½	49.00
3 x15	63.00
3½x15	63.00
4 x15	63.00
5 x15	63.00
6 x15	63.00
3½x17½	86.00
4 x17½	86.00
5 x17½	86.00
6 x17½	86.00
8 x17½	86.00
6 x20½	108.00
8 x20½	108.00
10 x20½	108.00

600-Pound
No. 2420 Screwed
No. 2430 Slip-On

Size Inches	Each
1 x 6½	$21.00
1¼x 6½	21.00
1½x 6½	21.00
1½x 7½	24.50
2 x 7½	24.50
1½x 8¼	28.00
2 x 8¼	28.00
2½x 8¼	28.00
2 x 9	35.00
2½x 9	35.00
3 x 9	35.00
2 x10¾	57.00
2½x10¾	57.00
3 x10¾	57.00
2 x13	79.00
2½x13	79.00
3 x13	79.00
4 x13	79.00
2 x14	94.00
2½x14	94.00
3 x14	94.00
4 x14	94.00
5 x14	94.00
3 x16½	136.00
4 x16½	136.00
5 x16½	136.00
6 x16½	136.00
4 x20	212.50
5 x20	212.50
6 x20	212.50
8 x20	212.50
6 x22	255.00
8 x22	255.00
10 x22	255.00

Facing of Flanges

The 150 and 300-pound reducing slip-on welding flanges are regularly furnished with a raised face 1/16-inch high.

The 400 and 600-pound reducing slip-on welding flanges are regularly furnished with a male face ¼-inch high (large male), or with a female face 3/16-inch deep (large female). Orders must specify which facing is wanted.

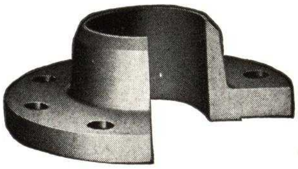
*For sizes 3½-inch and smaller, use 600-pound.

American Standard

The diameter, thickness, facing, and drilling of the flanges shown on this page conform to the American Steel Flange Standard (B16e-1932).

The prices given include drilling to the American Steel Flange Standard, and spot facing. No deduction is made if flanges are ordered faced only.

Forged Steel Welding Neck Flanges



Forged from high quality steel, especially selected for weldability. Carbon molybdenum and other alloys furnished on special order. Conform to the American Standards and are accurately machined. Bored, faced, drilled and spot faced.

Has a 1/16-inch raised face. Hub ends are beveled 37½ degrees for welding with 1/16-inch straight face.

150-Pound—No. 2440

Bored for use with standard weight pipe in sizes 12 inches and smaller and for o.d. pipe with ⅜-inch wall in sizes 14 inches and larger.

Conforms to the 150-pound American Standards.

Nominal Pipe Size In.	Each	Diameter, In.			Thickness Flange In.	Over-all Ht. In.	Standard Drilling Template			Approx. Wt. Lb.
		Flange	Raised Face	Bore			No. of Bolts	Size Bolts In.	Bolt Circle In.	
½	$11.00	3½	1⅜	0.62	7/16	1⅞	4	½	2⅜	2
¾	11.00	3⅞	1 11/16	0.82	½	2 1/16	4	½	2¾	2
1	11.00	4¼	2	1.05	9/16	2 3/16	4	½	3⅛	2½
1¼	11.00	4⅝	2½	1.38	⅝	2¼	4	½	3½	2½
1½	11.00	5	2⅞	1.61	11/16	2 7/16	4	½	3⅞	4
2	11.00	6	3⅝	2.07	¾	2½	4	⅝	4¾	6
2½	13.00	7	4⅛	2.47	⅞	2¾	4	⅝	5½	10
3	15.00	7½	5	3.07	15/16	2¾	4	⅝	6	11½
3½	19.00	8½	5½	3.55	15/16	2 13/16	8	⅝	7	12
4	20.00	9	6 3/16	4.03	15/16	3	8	⅝	7½	16
5	24.00	10	7 5/16	5.05	15/16	3½	8	¾	8½	20
6	27.00	11	8½	6.07	1	3½	8	¾	9½	24
8	44.00	13½	10⅝	7.98	1⅛	4	8	¾	11¾	42
10	62.00	16	12¾	10.02	1 3/16	4	12	⅞	14¼	55
12	96.00	19	15	†12.00	1¼	4½	12	⅞	17	85
*14	130.00	21	16¼	†13.25	1⅜	5	12	1	18¾	114
*16	165.00	23½	18½	†15.25	1 7/16	5	16	1	21¼	142
*18	220.00	25	21	†17.25	1 9/16	5½	16	1⅛	22¾	155
*20	290.00	27½	23	†19.25	1 11/16	5 11/16	20	1⅛	25	170
*24	380.00	32	27¼	†23.25	1⅞	6	20	1¼	29½	260

300-Pound—No. 2450

Bored for standard weight pipe in sizes 12 inches and smaller, and for o.d. pipe with ⅜-inch wall in sizes 14 inches and larger.

Sizes 12 inches and smaller can also be furnished bored for extra strong pipe.

Conforms to the 300-pound American Steel Flange Standard in diameter and thickness.

½	$11.00	3¾	1⅜	0.62	9/16	2 1/16	4	½	2⅝	2
¾	11.00	4⅝	1 11/16	0.82	⅝	2¼	4	⅝	3¼	3
1	11.00	4⅞	2	1.05	11/16	2 7/16	4	⅝	3½	4
1¼	11.00	5¼	2½	1.38	¾	2 9/16	4	⅝	3⅞	5½
1½	11.00	6⅛	2⅞	1.61	13/16	2 11/16	4	¾	4½	7
2	11.00	6½	3⅝	2.07	⅞	2¾	8	⅝	5	8
2½	13.00	7½	4⅛	2.47	1	3	8	¾	5⅞	12
3	15.00	8¼	5	3.07	1⅛	3⅛	8	¾	6⅝	16
3½	19.00	9	5½	3.55	1 3/16	3 3/16	8	¾	7¼	20
4	20.00	10	6 3/16	4.03	1¼	3⅜	8	¾	7⅞	25
5	24.00	11	7 5/16	5.05	1⅜	3⅞	8	¾	9¼	34
6	27.00	12½	8½	6.07	1 7/16	3⅞	12	¾	10⅝	45
8	44.00	15	10⅝	7.98	1⅝	4⅜	12	⅞	13	70
10	62.00	17½	12¾	10.02	1⅞	4⅝	16	1	15¼	99
12	96.00	20½	15	†12.00	2	5⅛	16	1⅛	17¾	142
*14	130.00	23	16¼	†13.25	2⅛	5⅝	20	1⅛	20¼	186
*16	165.00	25½	18½	†15.25	2¼	5¾	20	1¼	22½	246
*18	220.00	28	21	†17.25	2⅜	6¼	24	1¼	24¾	305
*20	290.00	30½	23	†19.25	2½	6⅜	24	1¼	27	378
*24	380.00	36	27¼	†23.25	2¾	6⅝	24	1½	32	545

Has a ¼-inch raised face. Hub ends are beveled 37½° for welding with 1/16-inch straight face.

Specify diameter of bore when ordering.

400-Pound—No. 2460

Conforms to the 400-pound American Steel Flange Standard in diameter and thickness. For sizes 3½ inches and smaller, use 600-pound American Standard.

Nom. Pipe Size In.	Each	Diam. Flge. In.	Diam. Raised Face, In.	Thick. Flange In.	Height Over-all In.	Standard Drillings Template				Approx. Wt. Lb.
						No. of Bolts	Stud Bolts Inches Diam.	Stud Bolts Inches Lgth.‡	Bolt Circle In.	
4	$20.00	10	6 3/16	1⅜	3½	8	⅞	5¼	7⅞	30
5	24.00	11	7 5/16	1½	4	8	⅞	5½	9¼	39
6	27.00	12½	8½	1⅝	4 1/16	12	⅞	5¾	10⅝	49
8	44.00	15	10⅝	1⅞	4⅝	12	1	6½	13	78
10	62.00	17½	12¾	2⅛	4⅞	16	1⅛	7¼	15¼	110
12	96.00	20½	15	2¼	5⅜	16	1¼	7¾	17¾	160
14 O.D.	130.00	23	16¼	2⅜	5⅞	20	1¼	8	20¼	233
16 O.D.	165.00	25½	18½	2½	6	20	1⅜	8½	22½	294
18 O.D.	220.00	28	21	2⅝	6½	24	1⅜	8¾	24¾	360
20 O.D.	290.00	30½	23	2¾	6⅝	24	1½	9½	27	445
24 O.D.	380.00	36	27¼	3	6⅞	24	1¾	10½	32	640

600-Pound—No. 2470

Conforms to the 600-pound American Flange Standard in diameter and thickness.

½	$16.30	3¾	1⅜	9/16	2 1/16	4	½	2¾	2⅝	3
¾	16.30	4⅝	1 11/16	⅝	2¼	4	⅝	3¼	3¼	3½
1	16.30	4⅞	2	11/16	2 7/16	4	⅝	3¼	3½	4
1¼	16.30	5¼	2½	13/16	2⅝	4	⅝	3½	3⅞	5
1½	16.30	6⅛	2⅞	⅞	2¾	4	¾	4	4½	8
2	16.30	6½	3⅝	1	2⅞	8	⅝	4	5	10
2½	19.00	7½	4⅛	1⅛	3⅛	8	¾	4½	5⅞	14
3	23.00	8¼	5	1¼	3¼	8	¾	4¾	6⅝	18
3½	29.00	9	5½	1⅜	3⅜	8	⅞	5¼	7¼	26
4	39.00	10¾	6 3/16	1½	4	8	⅞	5½	8½	37
5	53.50	13	7 5/16	1¾	4½	8	1	6¼	10½	68
6	63.50	14	8½	1⅞	4⅝	12	1	6½	11½	73
8	90.00	16½	10⅝	2 3/16	5¼	12	1⅛	7½	13¾	112
10	138.00	20	12¾	2½	6	16	1¼	8¼	17	189
12	188.00	22	15	2⅝	6⅛	20	1¼	8½	19¼	226
14 O.D.	200.00	23¾	16¼	2¾	6½	20	1⅜	9	20¾	347
16 O.D.	270.00	27	18½	3	7	20	1½	9¾	23¾	481
18 O.D.	330.00	29¼	21	3¼	7¼	20	1⅝	10½	25¾	555
20 O.D.	400.00	32	23	3½	7½	24	1⅝	11¼	28½	690
24 O.D.	590.00	37	27¼	4	8	24	1⅞	12¾	33	977

900-Pound—No. 2480

Conforms to the 900-pound American Steel Flange Standard in diameter and thickness.

1	$27.00	5⅞	2	1⅛	2⅞	4	⅞	4¾	4	8½
1¼	27.00	6¼	2½	1⅛	2⅞	4	⅞	4¾	4⅜	10
1½	27.00	7	2⅞	1¼	3¼	4	1	5¼	4⅞	14
2	27.00	8½	3⅝	1½	4	8	⅞	5½	6½	24
2½	35.00	9⅝	4⅛	1⅝	4⅛	8	1	6	7½	36
3	35.00	9½	5	1½	4	8	⅞	5½	7½	29
4	62.00	11½	6 3/16	1¾	4½	8	1⅛	6½	9¼	51
5	85.00	13¾	7 5/16	2	5	8	1¼	7¼	11	86
6	104.00	15	8½	2 3/16	5½	12	1⅛	7½	12½	110
8	190.00	18½	10⅝	2½	6⅜	12	1⅜	8½	15½	187
10	270.00	21½	12¾	2¾	7¼	16	1⅜	9	18½	268
12	360.00	24	15	3⅛	7⅞	20	1⅜	9¾	21	372
14 O.D.	560.00	25¼	16¼	3⅜	8⅜	20	1½	10½	22	562
16 O.D.	690.00	27¾	18½	3½	8½	20	1⅝	11	24¼	685
18 O.D.	925.00	31	21	4	9	20	1⅞	12¾	27	924
20 O.D.	1160.00	33¾	23	4¼	9¾	20	2	13½	29½	1164
24 O.D.	2100.00	41	27¼	5½	11½	20	2½	17	35½	2107

1500-Pound—No. 2490

Conforms to the 1500-pound American Steel Flange Standard in diameter and thickness.

½	$27.00	4¾	1⅜	⅞	2⅜	4	¾	4	3¼	7
¾	27.00	5⅛	1 11/16	1	2¾	4	¾	4¼	3½	7
1	27.00	5⅞	2	1⅛	2⅞	4	⅞	4¾	4	8½
1¼	27.00	6¼	2½	1⅛	2⅞	4	⅞	4¾	4⅜	10
1½	27.00	7	2⅞	1¼	3¼	4	1	5¼	4⅞	14
2	27.00	8½	3⅝	1½	4	8	⅞	5½	6½	24
2½	35.00	9⅝	4⅛	1⅝	4⅛	8	1	6	7½	36
3	46.00	10½	5	1⅞	4⅝	8	1⅛	6¾	8	48
4	72.00	12¼	6 3/16	2⅛	4⅞	8	1¼	7½	9½	69
5	125.00	14¾	7 5/16	2⅞	6⅛	8	1½	9½	11½	132
6	160.00	15½	8½	3¼	6¾	12	1⅜	10	12½	164
8	265.00	19	10⅝	3⅝	8⅜	12	1⅝	11¼	15½	273
10	440.00	23	12¾	4¼	10	12	1⅞	13¼	19	454
12	660.00	26½	15	4⅞	11⅛	16	2	14¾	22½	690

*Outside diameter.

†Bores for sizes 12-inch and larger not listed in the American Standard and are not the same as Pipe Schedule 40.

‡Male and female and tongue and groove.

Drilling Templates for Flanges

150-Pound Standard

Nom. Pipe Size In.	Diam. of Bolt Circle Inches	No. of Bolts	Diam. of Bolts In.	*Length of Bolts, In.	
				†Raised Face	‡Ring Joint
½	2⅜	4	½	2¼	. . .
¾	2¾	4	½	2¼	. . .
1	3⅛	4	½	2½	3
1¼	3½	4	½	2½	3¼
1½	3⅞	4	½	2¾	3¼
2	4¾	4	⅝	3¼	3¾
2½	5½	4	⅝	3½	4
3	6	4	⅝	3½	4¼
3½	7	8	⅝	3½	4¼
4	7½	8	⅝	3½	4¼
5	8½	8	¾	3¾	4½
6	9½	8	¾	4	4½
8	11¾	8	¾	4¼	4¾
10	14¼	12	⅞	4¾	5¼
12	17	12	⅞	4¾	5½
14 O.D.	18¾	12	1	5¼	6
16 O.D.	21¼	16	1	5½	6
18 O.D.	22¾	16	1⅛	6	6½
20 O.D.	25	20	1⅛	6¼	7
24 O.D.	29½	20	1¼	7	7¾

300-Pound Standard

½	2⅝	4	½	2½	. . .
¾	3¼	4	⅝	3	. . .
1	3½	4	⅝	3	. . .
1¼	3⅞	4	⅝	3¼	. . .
1½	4½	4	¾	3½	. . .
2	5	8	⅝	3½	4¼
2½	5⅞	8	¾	4	4¾
3	6⅝	8	¾	4¼	5
3½	7¼	8	¾	4¼	5¼
4	7⅞	8	¾	4½	5¼
5	9¼	8	¾	4¾	5½
6	10⅝	12	¾	4¾	5¾
8	13	12	⅞	5½	6¼
10	15¼	16	1	6¼	7¼
12	17¾	16	1⅛	6¾	7½
14 O.D.	20¼	20	1⅛	7	7¾
16 O.D,	22½	20	1¼	7½	8½
18 O.D.	24¾	24	1¼	7¾	8¾
20 O.D.	27	24	1¼	8¼	9¼
24 O.D.	32	24	1½	9¼	10¼

400-Pound Standard

For sizes 3½ inch and smaller use 600-pound Standard.

Nom. Pipe Size In.	Diam. of Bolt Circle Inches	No. of Bolts	Diam. of Bolts In.	*Length of Bolts, In.			
				Raised Face	M. & F. T. & G.	‡Ring Joint	§Lap Joint
4	7⅞	8	⅞	5½	5¼	5¾	5
5	9¼	8	⅞	5¾	5½	6	5¼
6	10⅝	12	⅞	6	5¾	6¼	5½
8	13	12	1	6¾	6½	7	6¼
10	15¼	16	1⅛	7½	7¼	7¾	7
12	17¾	16	1¼	8	7¾	8½	7½
14 O.D.	20¼	20	1¼	8¼	8	8¾	7¾
16 O.D.	22½	20	1⅜	8¾	8½	9¼	8¼
18 O.D.	24¾	24	1⅜	9	8¾	9½	8½
20 O.D.	27	24	1½	9¾	9½	10¼	9¼
24 O.D.	32	24	1¾	10¾	10½	11¼	10¼

600-Pound Standard

½	2⅝	4	½	3	2¾	3	2½
¾	3¼	4	⅝	3½	3¼	3½	3
1	3½	4	⅝	3½	3¼	3½	3
1¼	3⅞	4	⅝	3¾	3½	3¾	3¼
1½	4½	4	¾	4¼	4	4¼	3¾
2	5	8	⅝	4¼	4	4½	3¾
2½	5⅞	8	¾	4¾	4½	5	4¼

Continued

600-Pound Standard

Concluded

Nom. Pipe Size In.	Diam. of Bolt Circle Inches	No. of Bolts	Diam. of Bolts In.	*Length of Bolts, In.			
				Raised Face	M. & F. T. & G.	‡Ring Joint	§Lap Joint
3	6⅝	8	¾	5	4¾	5¼	4½
3½	7¼	8	⅞	5½	5¼	5¾	5
4	8½	8	⅞	5¾	5½	6	5¼
5	10½	8	1	6½	6¼	6¾	6
6	11½	12	1	6¾	6½	7	6¼
8	13¾	12	1⅛	7¾	7½	8	7¼
10	17	16	1¼	8½	8¼	8¾	8
12	19¼	20	1¼	8¾	8½	9	8¼
14 O.D.	20¾	20	1⅜	9¼	9	9½	8¾
16 O.D.	23¾	20	1½	10	9¾	10¼	9½
18 O.D.	25¾	20	1⅝	10¾	10½	11	10¼
20 O.D.	28½	24	1⅝	11½	11¼	11¾	11
24 O.D.	33	24	1⅞	13	12¾	13½	12½

900-Pound Standard

For sizes 2½ inch and smaller use 1500-pound standard.

3	7½	8	⅞	5¾	5½	6	5¼
4	9¼	8	1⅛	6¾	6½	7	6¼
5	11	8	1¼	7½	7¼	7¾	7
6	12½	12	1⅛	7¾	7½	8	7¼
8	15½	12	1⅜	8¾	8½	9	8¼
10	18½	16	1⅜	9¼	9	9½	8¾
12	21	20	1⅜	10	9¾	10¼	9½
14 O.D.	22	20	1½	10¾	10½	11¼	10¼
16 O.D.	24¼	20	1⅝	11¼	11	11¾	10¾
18 O.D.	27	20	1⅞	13	12¾	13½	12½
20 O.D.	29½	20	2	13¾	13½	14½	13¼
24 O.D.	35½	20	2½	17¼	17	18¼	16¾

1500-Pound Standard

½	3¼	4	¾	4¼	4	. . .	3¾
¾	3½	4	¾	4½	4¼	. . .	4
1	4	4	⅞	5	4¾	5	4½
1¼	4⅜	4	⅞	5	4¾	5	4½
1½	4⅞	4	1	5½	5¼	5½	5
2	6½	8	⅞	5¾	5½	6	5¼
2½	7½	8	1	6¼	6	6½	5¾
3	8	8	1⅛	7	6¾	7¼	6½
4	9½	8	1¼	7¾	7½	8	7¼
5	11½	8	1½	9¾	9½	10	9¼
6	12½	12	1⅜	10¼	10	10¾	9¾
8	15½	12	1⅝	11½	11¼	12	11
10	19	12	1⅞	13½	13¼	13¾	13
12	22½	16	2	15	14¾	15¾	14½
14 O.D.	25	16	2¼	16¼	16	17¼	15¾
16 O.D.	27¾	16	2½	17¾	17½	19	17¼
18 O.D.	30½	16	2¾	19½	19¼	20¾	19
20 O.D.	32¾	16	3	21½	21¼	22¾	20¾
24 O.D.	39	16	3½	24¼	24	26	23¾

2500-Pound Standard

½	3½	4	¾	4¾	4½	4¾	4¼
¾	3¾	4	¾	5	4¾	5	4½
1	4¼	4	⅞	5½	5¼	5½	5
1¼	5⅛	4	1	6	5¾	6¼	5½
1½	5¾	4	1⅛	6¾	6½	7	6¼
2	6¾	8	1	7	6¾	7¼	6½
2½	7¾	8	1⅛	7¾	7½	8	7¼
3	9	8	1¼	8¾	8½	9¼	8¼
4	10¾	8	1½	10	9¾	10½	9½
5	12¾	8	1¾	12	11¾	12½	11½
6	14½	8	2	13¾	13½	14¼	13¼
8	17¼	12	2	15¼	15	16	14¾
10	21¼	12	2½	19¼	19	20¼	18¾
12	24⅜	12	2¾	21¼	21	22¼	20¾

All dimensions are in inches. Bolt holes are ⅛ inch larger than nominal bolt diameter and straddle flange center lines.

*These lengths include the thickness of two nuts. The ends of all stud bolts shall be rounded or crowned. The lengths given in table do not include height of crown.

†Bolt lengths for lapped joints are determined as follows: For lapped to 1/16-inch raised face add one thickness of lap; for lapped to lapped add thickness of both laps.

‡When groove is made in the lap add thickness of pipe for each lap.

§Bolt lengths for lapped joints may be determined as follows: For lapped to lapped add thickness of both laps; for lapped to ¼-inch male face on flange add thickness of lap and ¼ inch; for lapped to female face on flange add thickness of one lap only, the minimum thickness of which must be ¼ inch to serve as a male face; for male and female lapped joint made in the laps add two thicknesses of pipe but the lap that serves as the male face must not be less than ¼ inch.

Bonney WeldOlets for Welded Branch Pipe Outlets

WeldOlets are standard, stock welding fittings of drop forged steel, designed for making any type or combination of right angle branch pipe outlets.

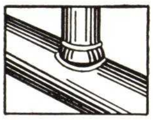
Made in three types: with welding outlet, threaded outlet and socket outlet.

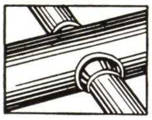
Easily Installed

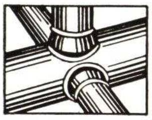
WeldOlets are easily installed. Select the position of the outlet, rub the fitting over the pipe several times to remove scale. Then mark the center lines.

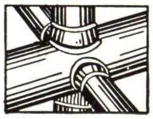
The hole should be cut in the main pipe before tacking the fitting into position, but can be cut after the fitting is installed if desired. The fitting is used as a template and the hole is cut with a torch.

The electric arc or oxy-acetylene method of welding is used to complete the job. A junction of full pipe strength and a leakproof joint is the result.









BONNEY WELDOLET
BONNEY THREDOLET
BONNEY WELDOLET

The branch line is then attached either by welding or screwing into place depending upon the type of outlet used.

Result a leakproof junction of full pipe strength.

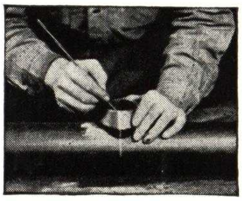
Advantages

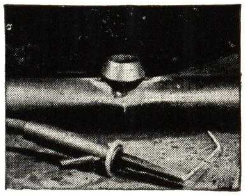
Tees, crosses, side outlets, side outlets and crosses and double crosses can all be made with WeldOlets.

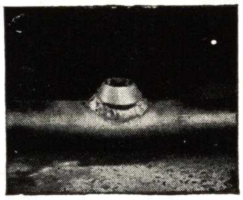
Because of the funnel-shaped intake aperture of WeldOlets they reduce friction and turbulence to a minimum.

The fitting is used as a template for cutting the hole in the main pipe and no complicated forming or fitting is necessary.

Adaptable to every type of piping system for all commonly used pressures and temperatures. In addition to drop forged steel, they can be supplied on special order in wrought iron, Toncan iron, brass, Monel, Everdur and other metals to meet every piping need.







Size-to-Size WeldOlets with Welding Outlet

Pipe Size......inches	½x½	¾x¾	1x1	1¼x1¼	1½x1½	2x2	2½x2½	3x3	3½x3½	4x4	‡5x5	‡6x6	‡8x8	‡10x10	‡12x12
Each..............	**$.75**	**.80**	**.90**	**1.10**	**1.35**	**1.65**	**2.20**	**2.70**	**4.00**	**8.00**	**16.00**	**30.00**	**45.00**	**85.00**	**110.00**
*Height.......inches	....	⅞	1	1⅛	1¼	1½	1⅝	2	2	2⅛	2¼	2⅜	2½	3	3⅜
O.D..........inches	....	1½	1⅞	2⅜	2½	3¼	3⅞	4⅝	5⅛	6	7	8⅛	10	12¼	14⅞
Approx. Wt...pounds	....	5/16	⅜	⅝	13/16	1¼	2½	3½	4¾	6	9½	10¼	20	31½	54

Size-to-Size WeldOlets with Threaded or Socket Outlet

Pipe Size..................inches	½x½	¾x¾	1x1	1¼x1¼	1½x1½	2x2	2½x2½	3x3	3½x3½	4x4	‡5x5	‡6x6
Threaded Outlet...............each	**$1.50**	**1.50**	**1.75**	**2.00**	**2.50**	**3.00**	**4.50**	**6.00**	**9.00**	**18.00**	**37.50**	**70.00**
Socket Outlet..................each	**2.03**	**2.03**	**2.36**	**2.70**	**3.38**	**4.05**	**6.08**	**8.10**	**12.15**	**24.30**	**50.63**	**94.50**
*Height......................inches	....	⅞	1	1⅛	1¼	1¼	1¾	2	2	2⅛	2⅜	2½
O.D..........................inches	....	1½	1⅞	2⅜	2½	3¼	3⅞	4⅝	5⅛	6	7	8½
Approx. Wt....................pounds	....	⅜	7/16	7/16	13/16	1¼	2½	4	5	6¾	11¼	17½

Reducing Size WeldOlets with Welding Outlet

§Outlet Size......inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10
Each.................	**$.50**	**.50**	**.50**	**.55**	**.65**	**.80**	**1.00**	**1.25**	**1.60**	**2.00**	**2.75**	**4.25**	**8.00**	**16.00**	**25.00**	**45.00**
*Height.........inches	⅝	⅝	¾	⅞	1	1⅛	1¼	1½	1⅝	1¾	1⅞	2	2¼	2⅜	2¾	3
O.D.............inches	1 11/32	1 11/32	1⅜	1¾	2⅛	2⅝	2⅞	3½	4⅛	4¾	5½	6	7¼	8⅜	10⅜	12⅝
Intake Size.......inches	29/32	29/32	29/32	1 5/32	1 7/16	1¾	2	2 9/16	3	3 11/16	4⅜	4¾	6⅛	7¼	8 11/16	10 13/16
Approx. Wt......pounds	3/16	3/16	5/16	5/16	7/16	9/16	15/16	1⅛	1¾	2¾	4½	5	5⅝	8¼	20	33

Reducing Size WeldOlets with Threaded or Socket Outlet

§Outlet Size....inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3	13½	4	5	6	8	10
Threaded Outlets.each	**$.75**	**$.75**	**$.75**	**$.85**	**$1.00**	**$1.25**	**$1.50**	**$2.00**	**$3.00**	**$4.00**	**$5.00**	**$10.00**	**$20.00**	**$40.00**	**$80.00**	**$120.00**
Socket Outlet.....each	**1.01**	**1.01**	**1.01**	**1.15**	**1.35**	**1.69**	**1.88**	**2.70**	**4.05**	**5.40**	**7.50**	**13.50**	**27.00**	**54.00**	**108.00**	**162.00**
*Height.........inches	⅞	⅞	⅞	⅞	1⅛	1¼	1¼	1½	1¾	2	2⅛	2¼	2⅝	2⅝	2¾	3
O.D...........inches	1 13/32	1 13/32	1 13/32	1¾	2⅛	2⅝	2⅞	3½	4⅛	4¾	5½	6	7¼	8⅞	10⅜	12⅝
Intake Size.....inches	29/32	29/32	29/32	1 5/32	1 7/16	1¾	2	2 9/16	3	3 11/16	4⅜	4¾	6⅛	7¼	8 11/16	10 13/16
Approx. Wt....pounds	3/16	3/16	¼	¼	½	¾	1	1⅜	2	3	4½	5½	9¼	15	26	35

Standard Sizes of Reducing WeldOlets

Main Pipe Size, Inches																
¾............	¾x¼	¾x⅜	¾x½	....	....	....	....	....	....	....	....	....	....	....	....	......
1............	1 x¼	1 x⅜	1 x½	1 x¾	....	....	....	....	....	....	....	....	....	....	....	......
1¼............	1¼x¼	1¼x⅜	1¼x½	1¼x¾	1¼x1		....	....	....	....	....	....	....	....	....	......
1½............	1½x¼	1½x⅜	1½x½	1½x¾	1½x1	1½x1¼	....	....	....	....	....	....	....	....	....	......
2............	2 x¼	2 x⅜	2 x½	2 x¾	2 x1	2 x1¼	2 x1½	....	....	....	....	....	....	....	....	......
2½............	2½x¼	2½x⅜	2½x½	2½x¾	2½x1	2½x1¼	2½x1½	2½x2	....	....	....	....	....	....	....	......
3............	3 x¼	3 x⅜	3 x½	3 x¾	3 x1	3 x1¼	3 x1½	3 x2	3 x2½	....	....	....	....	....	....	......
3½............	3½x¼	3½x⅜	3½x½	3½x¾	3½x1	3½x1½	3½x1½	3½x2	3½x2½	3½x3	....	....	....	....	....	......
4............	4 x¼	4 x⅜	4 x½	4 x¾	4 x1	4 x1¼	4 x1½	4 x2	4 x2½	4 x3	4 x3½	....	....	....	....	......
5............	5 x¼	5 x⅜	5 x½	5 x¾	5 x1	5 x1¼	5 x1½	5 x2	5 x2½	5 x3	5 x3½	5x4	....	....	....	......
6............	6 x¼	6 x⅜	6 x½	6 x¾	6 x1	6 x1¼	6 x1½	6 x2	6 x2½	6 x3	6 x3½	6x4	6x5	....	....	......
8............	8 x¼	8 x⅜	8 x½	8 x¾	8 x1	8 x1¼	8 x1½	8 x2	8 x2½	8 x3	8 x3½	8x4	8x5	‡8 x6	....	......
10............	10x¼	10x⅜	10x½	10x¾	10x1	10x1¼	10x1½	10x2	10x2½	10x3	10x3½	10x4	10x5	‡10x6	‡10x8	......
12............	12x¼	12x⅜	12x½	12x¾	12x1	12x1¼	12x1½	12x2	12x2½	12x3	12x3½	12x4	12x5	‡12x6	‡12x8	‡12x10

‡Made of cast steel, heat treated. §Orders must specify main pipe size.
*Indicates height from top of the curve of the main pipe to the extreme top of fittings.

Ammonia Valves and Fittings

90° Elbow

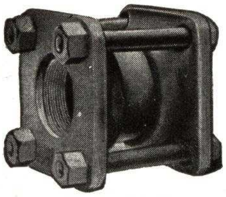
45° Elbow

Tee

Solid Return Bend

Cross

Split Return Bend


Square Flange Union

Oval Flange Union

Square Flanges

Oval Flanges

Angle Expansion Valve

A full line of screwed, round and square flanged ammonia fittings and valves. Oval and square flanges; globe, angle, check and expansion valves.

In ordering flanged fittings, state if wanted with or without companion flanges, bolts and gaskets.

Tee Expansion Valve

Prices upon application with specifications.

Standard Brass Expansion Joints

125 Pounds Steam Working Pressure
200 Pounds Cold Water, Oil, or Gas Working Pressure

Screwed, Standard Traverse

No. 742

Size In.	Each	Traverse In.	Size In.	Each	Traverse In.
½	$1.50	2	1½	$5.00	2¼
¾	2.20	2¼	2	8.00	2½
1	3.00	2¼	2½	14.00	2½
1¼	4.00	2¼	3	21.00	2¾

Screwed, Special Traverse

Size Inches	Each Traverse, Inches 4	6	8	12
½	$3.30	.....	.....	.....
¾	4.00	$5.00	$6.00	$8.00
1	4.90	6.00	7.25	9.50
1¼	6.15	7.50	9.00	12.00
1½	7.40	9.00	10.75	14.50
2	11.00	13.00	15.25	19.50
2½	17.50	20.50	23.00	28.00
3	25.00	29.00	32.00	37.50

Standard Iron Body Expansion Joints

Brass Sleeves
125 Pounds Steam Working Pressure
200 Pounds Cold Water, Oil, or Gas Working Pressure

No. 743, Screwed

No. 744, Flanged

Screwed, Standard Traverse

Size Inches	Each	Traverse Inches	Size Inches	Each	Traverse Inches
1½	$6.25	2½	4	$18.00	3¼
2	7.00	2½	5	38.00	4
2½	8.00	2½	6	42.50	4
3	10.00	2¾	8	90.00	4
3½	14.00	3	..	.....	...

Screwed, Special Traverse

Size Inches	Each Traverse, Inches 4	6	8	12
1½	$7.25	$9.50	$11.75	$16.25
2	8.50	11.00	13.50	18.50
2½	10.00	13.00	16.00	22.00
3	13.50	17.50	21.50	29.50
3½	20.00	25.00	30.00	40.00
4	24.00	30.00	36.00	48.00
5	.....	45.00	52.00	66.00
6	.....	51.50	60.50	78.50
8	.....	.....	110.00	130.00

Flanged, Standard Traverse

Size Inches	Each	Traverse Inches	Size Inches	Each	Traverse Inches
1½	$13.75	2½	6	$55.00	4
2	15.00	2½	*8	90.00	4
2½	16.00	2½	*10	135.00	4
3	18.50	2¾	*12	190.00	4
3½	25.00	3	*14	263.00	4
4	30.00	3¼	*16	334.00	4
5	48.00	4	..	......	..

Flanged, Special Traverse

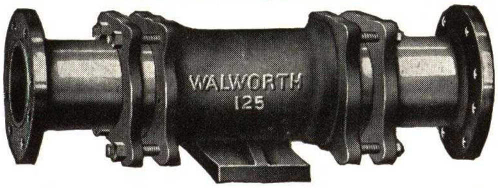
Size Inches	Each Traverse, Inches 4	6	8	12
1½	$14.00	$16.25	$18.50	$23.00
2	15.50	18.00	20.50	25.50
2½	17.00	20.00	23.00	29.00
3	21.00	25.00	29.00	37.00
3½	30.00	35.00	40.00	50.00
4	34.00	40.00	46.00	58.00
5	.....	55.00	62.00	76.00
6	.....	63.00	71.00	87.00
*8	.....	......	110.00	130.00
*10	.....	......	157.00	179.00
*12	.....	......	214.00	238.00
*14	.....	......	291.00	319.00
*16	.....	......	368.00	402.00

*Furnished with chromium plated steel sleeves Available with brass sleeves at added cost.

No. 1017F Walworth Iron Body Double Expansion Joints

Anchor Base—Standard Traverse

Flanged Ends
125 Pounds Service Steam Pressure
Non-Shock Pressures on Cold Oil, Water or Gas:
12 Inches and Smaller, 200 Pounds
14 and 16 Inches, 150 Pounds



For underground steam, oil, water or gas service and when long traverse is desired in one fitting. Supplied with special 6-inch traverse on each end at an increased price.

Joints 6 inches and smaller furnished with brass sleeves, 8 inches and larger, chromium plated steel sleeves.

Expansion joints are not furnished packed unless so ordered, and then at a special price. If wanted packed, the kind of packing or full information on the fluid to be handled should accompany the order.

Flanged end joints are furnished with 125-pound flanges to American Standard B16a.

Face to face open dimensions given apply to standard traverse joints. Face to face length open of special traverse joints will be equal to standard face to face plus twice the difference between special and standard traverse.

Size In.	Faced and Drilled Each	Traverse on Each Sleeve In.	Face to Face Open In.	Diam. Flange In.	Size In.	Faced and Drilled Each	Traverse on Each Sleeve In.	Face to Face Open In.	Diam. Flange In.
2	**$32.50**	4	28	6	**6**	**$120.00**	4	34	11
2½	**37.50**	4	28½	7	**8**	**190.00**	4	37¾	13½
3	**42.50**	4	29½	7½	**10**	**290.00**	3½	39¼	16
3½	**55.00**	4	30¾	8½	**12**	**390.00**	3½	43	19
4	**70.00**	4	31¾	9	**14**	**575.00**	3½	45	21
5	**100.00**	4	32½	10	**16**	**775.00**	3½	48½	23½

No. 1021F Walworth Extra Heavy Steeliron Expansion Joints

With Internal Guides—With Tie Rods—Standard Traverse

Flanged Ends
250 Pounds Service Steam Pressure
500 Pounds Non-Shock Service Cold Oil, Water, or Gas Pressure

Joints 6 inches and smaller furnished with brass sleeves; 8 inches and larger, with chromium-plated steel sleeves. Bodies and flanges made of higher strength cast iron. Furnished with 250-pound flanges to American Standard B16b; 1/16-inch raised face.

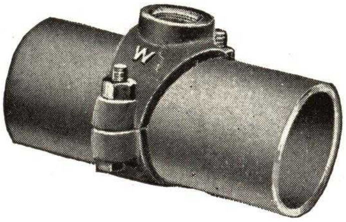
Shipped faced and drilled unless otherwise specified; if ordered faced only, furnished at same price as faced and drilled.

Not furnished packed unless so ordered; then at special price. If wanted packed, kind of packing or full information on fluid to be handled should accompany the order.

Size In.	Each	Face to Face Open, In.	Diam. Flange In.	Traverse In.
2	**$35.00**	15½	6½	2½
2½	**45.00**	16	7½	2½
3	**55.00**	17⅝	8¼	2¾
3½	**65.00**	18 11/16	9	3
4	**75.00**	19½	10	3¼
5	**85.00**	22⅜	11	4
6	**105.00**	23¾	12½	4
8	**150.00**	25½	15	4
10	**250.00**	27⅝	17½	4
12	**300.00**	29¾	20½	4
14	**500.00**	31	23	4
16	**750.00**	33	25½	4
18	**1000.00**	34⅞	28	4

Extra heavy double expansion joints, prices upon request

No. 7257 Walworth Malleable Water Pipe Clamps



Clamps 3½ inches and larger as illustrated; 3 inches and smaller have wrought iron bands.

		Clamps Will Fit				
No.	Black Each	O.D. Circle In.	Size Wrought Pipe In.	O.D. Casing In.	Size Cast Iron Pipe In.	Size Pipe Connections Clamps Are Tapped for Inches
0	**$1.00**	1⅞	1½	2	.	½, ¾
1	**1.00**	2⅜	2	2½	.	½ to 1
2	**1.25**	2⅞	2½	2¾, 3	2	1, 1¼
3	**1.25**	3½	3	3½	.	½ to 1
4	**1.50**	3½	3	3½	.	1¼ to 2
5	**1.50**	4	3½	4	3	¾, 1
6	**1.75**	4	3½	4	3	1¼ to 2
7	**1.75**	4½	4	4½	.	½ to 1½
8	**2.00**	4½	4	4½	.	2
9	**4.00**	4½	4	4½	.	2½, 3
10	**1.80**	5	4½	5	4	¾ to 1½
11	**2.15**	5	4½	5	4	2
12	**4.00**	5	4½	5	4	2½ ,3
13	**1.80**	5½	5	5½	.	¾ to 1½
14	**2.15**	5½	5	5½	.	2
15	**4.00**	5½	5	5½	.	2½, 3
16	**2.00**	6	....	6	5	½ to 1½
17	**2.40**	6	....	6	5	2
18	**4.50**	6	....	6	5	2½, 3
19	**2.25**	6⅝	6	6⅝	.	¾ to 1½
20	**2.50**	6⅝	6	6⅝	.	2
21	**5.00**	6⅝	6	6⅝	.	2½, 3
22	**2.50**	7	....	7	6	¾ to 1½
23	**2.70**	7	....	7	6	2
24	**5.00**	7	....	7	6	2½, 3
25	**2.50**	7⅝	7	7⅝	.	¾ to 1½
26	**2.70**	7⅝	7	7⅝	.	2
27	**5.00**	7⅝	7	7⅝	.	2½, 3
28	**4.50**	8	....	8	7	¾ to 1½
29	**5.00**	8	....	8	7	2
30	**5.50**	8	....	8	7	2½, 3
30½	**5.50**	8⅝	8	8⅝	.	¾ to 1½
31	**5.50**	8⅝	8	8⅝	.	2 to 3
32	**6.00**	8⅝	8	8⅝	.	4
33	**8.00**	9⅝	9	....	.	1½ to 3
34	**9.00**	10	....	10	9	¾ to 2
35	**9.00**	10¾	10	....	.	¾ to 2
36	**10.00**	12¾	12	....	.	¾ to 2

Always order water pipe clamps by number.
For galvanized, add 50 per cent to above lists.

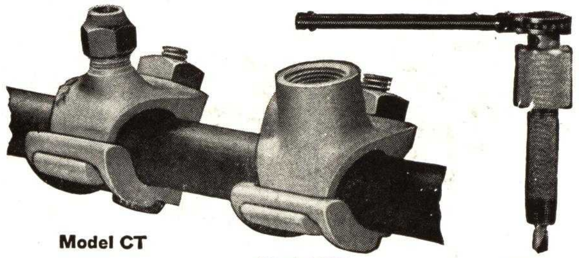
No. 7256 Walworth Malleable Pipe Saddles

With Wrought Iron Bands or Straps

For galvanized fittings, add 50% to prices shown.

Size Pipe In.	Black Each	Saddles Tapped for Pipe, In.
1½	**$.90**	½, ¾
2	**1.00**	½ to 1½
2½	**1.25**	¾ to 1½
3	**1.25**	¾ to 2
3½	**1.40**	¾ to 2
4	**1.50**	¾ to 2
5	**2.75**	¾ to 2
5	**2.75**	2½, 3
6	**2.75**	¾ to 2
6	**5.75**	2½ to 4
8	**6.50**	1 to 4
10	**10.00**	1½ to 4
10	**10.00**	4½ to 6
12	**14.00**	1½ to 4
12	**14.00**	4½ to 6

Skinner-Seal Saddle Tees



Model CT

Model ST

Drilling Device

For making both gas and water connections. Combines tee, union and nipple in one fixture. No pipe cutting nor threading necessary.

Made of malleable iron, electro-plated; composition gasket riveted in. Permanent under pressure.

Model CT

Has flared joint for ⅜-inch o.d. copper tubing.

O.D. of Tubing Outlet.........inches	½x⅜	¾x⅜	1x⅜
Each..........................	$.65	.70	.75
Weight.......................ounces	11	13	17

Model ST

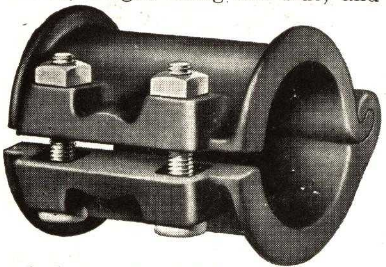
Has threads at outlet for pipe connections.

Size.......................inches	½x¼ ½x⅜ ½x½	¾x¼ ¾x⅜ ¾x½	1″ Tapped ¼–¾
Each..........................	$.65	.70	.75
Weight.......................ounces	11	13	17

Drilling Devices

	For Model CT	For Model ST		
No.................	0	1	2	3
Each...............	$2.50	2.50	2.50	4.25
Drills Holes...inches	¼	5/16	13/32	9/16
For Outlets:				
O.D.........inches	⅜	..	..	..
P.T.........inches	..	¼	⅜, ½	½, ¾

Skinner-Seal Emergency Pipe Clamps



For stopping leaks in pipe lines. Malleable iron cylinder, halved, hinged along one side, and fitted with bolts on other. A gasket completes clamp. By concentration of pressure on leak, this clamp makes a permanent repair.

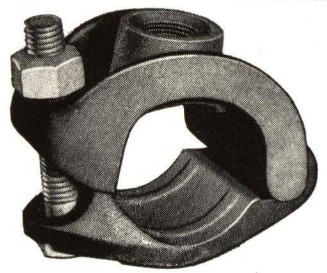
For larger sizes of pipe, clamps are reinforced with heavy ribs. Enameled to resist rust. Furnished with gaskets and electro-plated bolts. Specify when O.D. or cast iron pipe sizes. Sizes ½ to 2-inch, packed 12 in a carton; sizes 2½ to 4-inch, 6 in a carton.

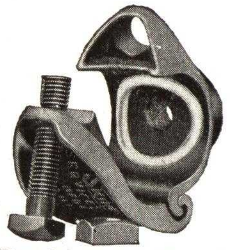
Size Pipe I.D. In.	Lgth. Over-all In.	O.D. In.	No. Bolts	Wt. Lb. Each	Each
½	3¼	..	2	1¼	$.60
¾	3¼	..	2	1½	.68
1	3½	..	2	1¾	.75
1¼	3¾	..	2	2⅝	.90
1½	4	..	2	3	1.05
2	4¼	..	2	3¾	1.20
2½	4½	..	2	4½	1.50
3	4¾	..	2	5¾	1.88
*3	5⅜	..	2	6⅞	2.25
3½	5⅜	..	2	6⅞	2.25
4	6	..	2	9⅞	3.00
*4	6½	..	3	10⅞	5.25
4½	6½	..	3	10⅞	5.25
5	7⅛	..	3	14½	7.50
†5 3/16	7⅛	..	3	14½	7.50
†5⅝	8	6	3	13	8.25
6	8	..	3	17⅝	9.00
† 6¼	8	..	3	17⅝	$9.00
* 6	8	..	3	16⅛	9.00
† 6⅝	8	7	3	16⅛	9.00
7	8⅞	..	3	21⅜	10.50
† 7⅝	9½	8	3	24⅛	11.50
8	9⅞	..	3	30¼	12.00
† 8¼	9⅞	..	3	30¼	12.00
* 8	9¾	..	3	30½	12.00
† 8⅝	9¾	9	3	30½	12.00
9	10⅛	..	3	37	13.50
10	11⅞	..	4	46¼	15.00
*10	12	..	4	51	15.00
†10⅝	12	11	4	51	15.00
12	12	..	4	58⅝	18.00
*12	12	..	4	61¼	18.00
†12½	12	13	4	61¼	18.00

*Cast iron. †Casing.

Model SS Skinner-Seal Service Saddles

Malleable Iron





Showing Gasket Riveted in Place

For service connections on gas, oil and water lines. Made of malleable iron, the improved design without straps, is of utmost simplicity and strength.

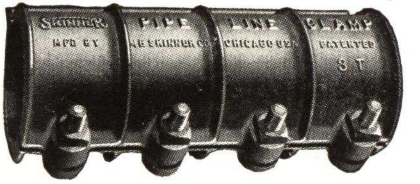
In ordering, specify exact size that saddles are to be tapped. Special threads at no extra charge.

Saddle is lacquered, complete with bolt and lead gasket.

Size Pipe In.	Tapped Inches	Wt. Lb.	Each
1¼	½ to 1	1⅞	$1.14
1½	½ to 1	2½	1.20
2	½ to 1¼	3⅝	1.26
*2	½ to 1½	3¾	1.54
†2	½ to 1½	4¾	1.54
2½	½ to 1½	4¼	1.54
3	½ to 1¼	5⅜	1.80
3	1½, 2	6⅛	2.25
*3	½ to 1¼	5⅜	1.89
*3	1½, 2	5⅝	2.26
4	½ to 1¼	5¾	1.99
4	1½, 2	7	2.45
*4	½ to 1¼	6½	2.14
*4	1½, 2	7⅜	2.66
5	½ to 2	13¾	4.41
‡6	½ to 2	13⅝	4.41
6	½ to 1¼	12¼	4.54
6	1½, 2, 2½	13⅛	5.36
§6⅝ ‡7 *6	½ to 2	14½	5.84
§6⅝ ‡7 *6	2 Mueller 2½, 3 A.P.I.	16¼	6.89
‡8	½ to 3	26⅛	9.81
8	½ to 1¼	23½	$9.10
8	1½, 2	26½	9.45
8	2 Mueller 2½, 3, 3½, 4 A.P.I.	29¾	11.71
* 8	½ to 2	23½	9.66
* 8	2 Mueller 2½, 3, 3½, 4 A.P.I.	29¾	12.08
10	½ to 2	26	10.28
10	2 Mueller 2½,3,3½, 4 A.P.I.	39¼	12.41
*10	½ to 2	26	10.28
*10	2 Mueller 2½,3,3½, 4 A.P.I.	39¼	12.41
12	½ to 2	30¾	11.00
12	2 Mueller 2½,3,3½, 4 A.P.I.	32½	13.48
*12	½ to 2	30¾	11.00
*12	2 Mueller 2½,3,3½, 4 A.P.I.	32½	13.48

*Cast iron. †Transite. ‡Outside diameter. §Casing.

Skinner-Seal Pipe Line Clamps



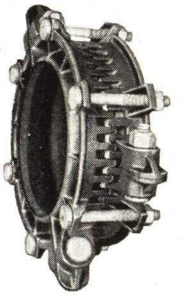
Will take care of long splits or bad corrosion. For high pressure work. Made of malleable iron heavily enameled.

Clamps furnished with 4 bolts.

Size Pipe In.	Lgth. In.	Wt. Lb.	Each
¾	7½	2⅞	$1.35
1	7⅞	3¼	1.50
1¼	8½	4¼	2.00
1½	9	4¼	2.50
2	9⅞	8⅜	3.00
*2	11	9½	3.50
2½	11	10¾	3.75
3	11	16¼	4.70
*3	11½	13⅞	5.50
3½	11½	13⅞	$5.50
4	12	18⅜	6.50
*4	12½	20⅝	10.75
4½	12½	20⅝	10.75
5	13	24	12.00
6	14	34	13.50
†6¼	14	34	13.50
*6	14	33⅜	14.00
†‡6⅝	14	33⅜	14.00

*Cast iron. †Casing. ‡Outside diameter, 7 inches.

Model HP Skinner-Seal High Pressure Weld Clamps



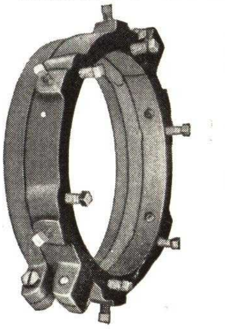
For stopping leaks in welded joints. Pinholed, cracked or ruptured welds can be permanently repaired. Clamp is applied quickly and easily under normal distribution pressure. High pressures are usually cut to intermediate, while applying clamp.

Clamp consists of two sturdy malleable iron intermeshing compression rings, halved, heavy tapered gasket and monel seal band. Plated steel bolts. Main rings are tapered and are cast with finger projections that intermesh. When gasket, monel seal band and intermeshing main rings are in place and bolts are tightened, the triangular gasket space inside is reduced, creating a tremendous pressure. Tested to 800 pounds line pressure. Molded gasket of soft gum and carbon black, with hard vulcanized tips at edges to complete seal. Used to replace leaky couplings.

Size Pipe In.	No. Bolts	Wt. Lb.	Each	Size Pipe In.	No. Bolts	Wt. Lb.	Each
2	4	18⅝	**$8.86**	***10**	6	35⅜	**$18.98**
2½	4	20⅛	**9.18**	**10**	6	35	**19.13**
3	4	20	**10.08**	***12**	6	43⅝	**21.64**
3½	4	21½	**11.05**	**12**	6	43⅜	**21.85**
4	4	22	**11.16**	***14**	8	47	**24.83**
5	4	22½	**11.66**	***15**	8	50	**25.41**
***6**	6	30	**13.39**	***16**	10	52⅜	**32.50**
6	6	26⅝	**13.75**	***18**	10	60	**35.25**
***7**	6	29⅞	**14.68**	***20**	12	74½	**39.38**
7	6	30¾	**14.99**	***22**	12	77½	**40.51**
***8**	6	32⅛	**15.59**	***24**	12	81	**41.30**
8	6	31¾	**15.71**	....	..	....	.....

*Outside diameter.

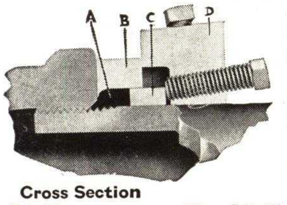
Model JC Skinner-Seal Pipe Joint Clamps



For stopping leaks at joints where pipe is screwed into fitting. Put on quickly without interrupting service, makes a permanent repair under any operating conditions, any pressure, or temperature. Effective on steam, oil, gas, ammonia, and brine leaks. Used by oil refineries on pressures up to 2000 pounds to the sq. in.

Made of malleable iron. When used on extremely high temperatures, specify so proper gasket is sent.

Cross section shows how gasket is forced directly into threads, stopping leak at source for permanent repair. A, gasket; B, gasket container ring; C, sliding push ring; D, stationary main ring.



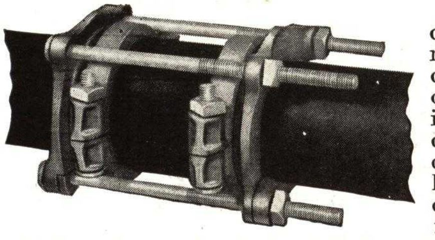
Cross Section

For special screwed fittings (lipped for lead, recessed, or cast iron) specify special joint clamp.

Wrench furnished with each clamp from 2 inches up.

I.D. Pipe Inches	Each	Wt. Lb.	I.D. Pipe Inches	Each	Wt. Lb.	O.D. Pipe Inches	Each	Wt. Lb.
½	**$2.15**	1	**6**	**$9.00**	8	**12**	**$22.50**	19
¾	**2.15**	1	**6** O.D.	**9.00**	8¼	**12** O.D.	**22.50**	19
1	**2.25**	1¼	**6⅝** or **7** O.D.	**10.50**	7½	**12½** Cas. **13** O.D.	**27.50**	17¾
1¼	**2.50**	2½						
1½	**3.00**	2½	**7**	**10.50**	7¾	**14** O.D.	**31.50**	20
2	**3.50**	2¾	**8** O.D.	**13.00**	11½	**15** O.D.	**33.75**	20½
2½	**3.75**	3⅛	**8**	**13.00**	13	**16** O.D.	**36.00**	26¼
3	**4.50**	4½	**9** O.D.	**15.75**	13½	**17** O.D.	**38.00**	27¼
3½	**5.25**	5¼	**9**	**15.75**	12¾	**18** O.D.	**40.50**	25½
4	**6.00**	6	**10** O.D.	**18.75**	14½	**20** O.D.	**45.00**	35
4½	**6.75**	5¼	**10**	**18.75**	14½	**22** O.D.	**55.00**	37
5 or **5 3/16** Casing	**7.50**	**6**	**11** O.D.	**19.50**	15	**24** O.D.	**65.00**	56¾
			11	**21.50**	17¼	....	.....	....

Skinner-Seal Collar Leak Clamps

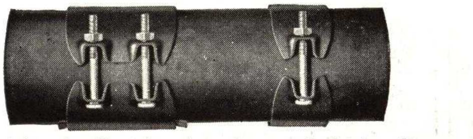


For stopping collar leaks permanently. Saves cost of tearing out and renewing collars and coupling. This clamp forces gasket directly into collar recesses, filling them completely and stopping leaks at their source—the threads. Made of malleable iron. Consists of four rings, two main pressure rings which receive pull of bolts and two gasket container rings. As recesses are filled with oilproof packing under pressure, ordinary contraction and expansion does not affect clamp. Lugs on main ring are heavily re-inforced. Lips on gasket container ring besides guiding packing into threads, positively prevent it from squeezing out between clamp and collar. All clamps, complete with gaskets and bolts, and painted with special rustproof lacquer.

Size Pipe In.	No. Bolts	No. in Ctn.	Wt. Lb.	Each	Size Pipe In.	No. Bolts	No. in Ctn.	Wt. Lb.	Each
2	4	3	5⅝	**$2.41**	**6**	6	1	16⅞	**$6.08**
***2**	4	3	4¼	**2.41**	**†6¼**	6	1	16⅞	**6.08**
2½	4	3	6⅞	**3.38**	**†6⅝**	6	1	18½	**8.83**
***2½**	4	3	5	**3.38**	**‡7**	6	1	18½	**8.83**
3	4	3	8¾	**3.51**	**†7⅝**	6	1	18¼	**10.14**
***3**	4	3	6⅜	**3.51**	**‡8**	6	1	18¼	**10.14**
3½	4	3	8¼	**4.14**	**8**	6	1	22⅜	**10.14**
4	4	3	10¾	**4.14**	**†8¼**	6	1	22⅜	**10.14**
4½	4	1	11⅛	**4.89**	**10**	8	1	25	**11.74**
5	4	1	11	**5.36**	**12**	8	1	24⅜	**13.49**
†5 3/16	4	1	11	**5.36**	**†12½**	8	1	27¾	.....
‡6	6	1	14¼	**6.08**	**‡13**	8	1	27¾	.....

*Upset. †Casing. ‡Outside diameter.

Skinner-Seal Pressed Steel Economy Pipe Clamps



For repairing badly pitted and corroded pipe lines at a minimum cost. Stops leaks instantly and permanently. Later, if desired, the half of clamp which covers the leak can be welded on as a patch, and the other half of the clamp can then be used again.

This is a 3/16-inch thick heavy hot pressed steel plate with inseparable lugs pressed out of the material itself. While heavy enough to outlast the pipe, it still is sufficiently flexible to conform to irregularities on the pipe surface.

Furnished with special crescent-shaped pressure-balancing gasket of soft tire stock, which can be used in single or multiple lengths for small or long leaks.

Made in two widths. Single-bolt width, 3½ inches wide, for pit holes, complete with neoprene cone plug gasket riveted in. Two-bolt width, 6½ inches wide, for running corrosion spots, complete with strip gasket.

Clamps are enameled; bolts are electro-plated.

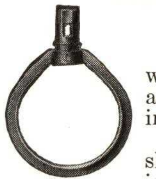
Size Pipe In.	**Narrow**		**Wide**		Size Pipe In.	**Narrow**		**Wide**	
	Wt. Lb.	Each	Wt. Lb.	Each		Wt. Lb.	Each	Wt. Lb.	Each
***4**	3½	**$1.25**	7	**$1.75**	**10**	7⅛	**$1.80**	13⅞	**$2.60**
4	3¾	**1.25**	7¼	**1.75**	**†10**	7⅛	**1.85**	13⅞	**2.70**
***5**	4	**1.30**	7⅜	**1.80**	***12**	8¼	**2.00**	14⅞	**2.90**
5	4⅛	**1.35**	8	**1.85**	**12**	8¼	**2.10**	15¾	**3.00**
***6**	4⅝	**1.35**	8⅜	**1.85**	**†12**	8¼	**2.15**	15¾	**3.10**
6	5	**1.40**	8¾	**2.00**	***14**	9	**2.40**	17¼	**3.40**
6⅝	5	**1.45**	8¾	**2.10**	***15**	9¾	**2.55**	17¾	**3.80**
***7**	5	**1.45**	8¾	**2.10**	***16**	10¼	**2.70**	19	**4.20**
***8**	5⅜	**1.50**	9¾	**2.15**	***18**	11⅜	**3.00**	21¼	**4.60**
8	5¾	**1.60**	10⅞	**2.30**	***20**	12⅞	**3.30**	23¼	**5.00**
†8	5¾	**1.65**	10⅞	**2.40**	***22**	13¾	**3.45**	24⅞	**5.20**
***10**	6½	**1.70**	12⅜	**2.45**	***24**	14⅞	**3.60**	27⅜	**5.40**

*Outside diameter. †Cast iron.

No. 101 Grinnell Pipe Rings

Malleable Iron—Adjustable Swivel

Underwriters' Approved



Ring can be used with coach screw rod or with machine threaded rod in connection with any type of ceiling flange, expansion case, insert, etc.

The unusual feature of this ring is the swivel shank allowing an adjustment of about 2 inches by turning nut on shank to left or right. Swivel shank automatically locks when pipe is in desired position. Furnished black; cadmium plated only on order.

Pipe Inches	Black per 100	Cadmium Plated per 100	Rod Inches	Pipe Inches	Black per 100	Cadmium Plated per 100	Rod Inches
¾	$22.80	$27.20	⅜	3	$51.20	$61.00	½
1	24.60	29.10	⅜	3½	53.20	65.00	½
1¼	25.40	30.00	⅜	4	67.00	84.00	⅝
1½	26.40	31.20	⅜	5	84.00	104.00	⅝
2	29.00	34.40	⅜	6	132.00	164.00	¾
2½	41.20	50.00	½	8	231.00	318.00	⅞

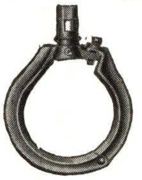
No. 104 Grinnell Pipe Hangers

Split Adjustable Swivel Ring—Malleable Iron

Underwriters' Approved

This pipe hanger can be used with coach screw rod or machine threaded rod in connection with most any type of ceiling flange, expansion case, etc.

The swivel shank allows an adjustment of about 2 inches by simply turning the nut on the shank to the left or right. The hinging of the ring is somewhat off center, and this provides sufficient seating to hold the pipe before closing the ring. A wedge type pin is loosely but inseparably cast into the hinged section for fastening this section.



Size In.	Per 100	For Rod Inches	Size In.	Per 100	For Rod Inches
¾	$41.40	⅜	3	$77.20	½
1	43.40	⅜	3½	105.20	½
1¼	46.40	⅜	4	124.00	⅝
1½	52.40	⅜	5	172.00	⅝
2	58.40	⅜	6	218.00	¾
2½	67.20	½	8	375.00	⅞

No. 100 Grinnell Adjustable Coach Screw Clips

Malleable Iron

Underwriters' Approved

Designed for Grinnell Sprinkler installation work where lines are to be hung from plastered, wood, plaster board and metal sheathed ceilings.

Sold complete for hanging ¾ to 2-inch pipe inclusive. For hanging other sizes and for other lengths of rods than specified, order parts separately. Regularly furnished in black, cadmium plated on special order only.

Pipe Size Inches	Black per 100	Cad. Pltd. per 100	C. S. Rod Inches Diam.	C. S. Rod Inches Length	Ceiling to Pipe Center Inches
¾	$46.00	$55.00	⅜	11	8 – 9⅝
1	48.00	57.00	⅜	11	8¼– 9¾
1¼	50.00	59.00	⅜	11½	8¾–10⅜
1½	52.00	61.00	⅜	11½	9 –10⅝
2	56.00	66.00	⅜	11½	9¼–10⅞

Grinnell Malleable Iron Split Pipe Rings

With Socket

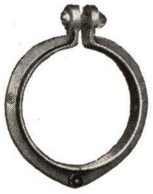
Cadmium-plated only on order.

For Pipe Size In.	Nos. 107 and 107R Black per 100	Nos. 107 and 107R Cad. Pltd. per 100	No. 107 Pipe Threaded Pipe Size In.	No. 107 Pipe Threaded Center of Pipe to Top of Socket, In.	No. 107R Rod Threaded Rod Size In.	No. 107R Rod Threaded Center of Pipe to Top of Socket, In.
½	$21.50	$23.50	⅛	2 1/16	⅜	2 1/16
¾	23.50	25.50	⅛	2¼	⅜	2¼
1	24.50	27.00	⅛	2⅜	⅜	2⅜
1¼	27.00	30.00	¼	2⅞	⅜	2 11/16
1½	30.00	33.50	¼	3	⅜	2 13/16
2	32.00	36.00	¼	3 5/16	⅜	3⅛
2½	39.00	44.00	¼	3⅝	½	3⅝
3	45.00	51.00	¼	4 1/16	½	4 1/16
3½	53.50	63.50	⅜	4 11/16	½	4 7/16
4	63.50	74.50	⅜	5⅛	⅝	5⅛
5	88.00	108.00	½	6 5/16	⅝	6
6	103.00	130.00	½	7 3/16	¾	7⅛
8	173.00	224.00	¾	8⅜	⅞	8 5/16

No. 108 Grinnell Split Pipe Rings

Malleable Iron

Regularly furnished in black. Cadmium plated only on order.



Pipe Size Inches	Black per 100	Cad. Plated per 100	Center of Pipe to Center of Bolt, In.	Bolt Size Inches
½	$15.00	$16.00	15/16	¼x1
¾	17.00	18.00	1⅛	¼x1
1	18.00	19.50	1¼	¼x1
1¼	20.00	22.00	1 9/16	¼x1
1½	23.00	25.50	1 11/16	¼x1¼
2	25.00	28.00	2	¼x1¼
2½	32.00	36.00	2 5/16	¼x1¼
3	38.00	43.00	2¾	¼x1¼
3½	45.00	53.00	3⅛	¼x1¼
4	55.00	64.00	3 9/16	⅜x2
5	75.00	92.00	4 7/16	⅜x2
6	90.00	114.00	5 5/16	½x2
8	160.00	208.00	6¼	½x2

No. 109 Grinnell Pipe Hangers

Split Ring with Socket and Pipe Threaded Coach Screw

Malleable Iron

Pipe Size In.	Per 100	Pipe Thrd. Size In.	Lgth. Coach Screw In.	Pipe Size In.	Per 100	Pipe Thrd. Size In.	Lgth. Coach Screw In.
½	$28.00	⅛	3½	2½	$47.00	¼	3½
¾	30.00	⅛	3½	3	53.00	¼	3½
1	31.00	⅛	3½	3½	63.50	⅜	5
1¼	35.00	¼	3½	4	73.50	⅜	5
1½	38.00	¼	3½	5	103.00	½	5
2	40.00	¼	3½	6	118.00	½	5

No. 127 Grinnell Malleable Iron Pipe Hangers

Split Pipe Ring with Socket and Ceiling Flange

Used to support piping, sizes ½ to 8 inches, from plank or wooden ceilings. A combination of split pipe ring and socket with pipe nipple and ceiling flange.

Prices do not include pipe nipples.

Size Pipe In.	Black Per 100	Socket and Plate Tapped Pipe, In.	Size Pipe In.	Black Per 100	Socket and Plate Tapped Pipe, In.
½	$31.50	⅛	3	$55.00	¼
¾	33.50	⅛	3½	67.50	⅜
1	34.50	⅛	4	77.50	⅜
1¼	37.00	¼	5	114.00	½
1½	40.00	¼	6	129.00	½
2	42.00	¼	8	199.00	¾
2½	49.00	¼	...	......	..

Cadmium plated only on order.
Galvanized prices upon application.

Grinnell Malleable Iron Sockets

For Split Pipe Rings

Pipe Size In.	No. 110 Tapped for Pipe Thread Black Per 100	No. 110 Tapped for Pipe Thread Thread Inches	No. 110-R Tapped for Rod Thread Black Per 100	No. 110-R Tapped for Rod Thread Thread Inches
½	$6.50	⅛	$6.50	⅜
¾	6.50	⅛	6.50	⅜
1	6.50	⅛	6.50	⅜
1¼	7.00	¼	6.50	⅜
1½	7.00	¼	6.50	⅜
2	7.00	¼	6.50	⅜
2½	7.00	¼	7.00	½
3	7.00	¼	7.00	½
3½	8.50	⅜	7.00	½
4	8.50	⅜	8.50	⅝
5	13.00	½	8.50	⅝
6	13.00	½	13.00	¾
8	18.00	¾	18.00	⅞

Cadmium plated only on order.

Grinnell Extension Split Ring Hangers

Malleable Iron

No. 139—With Ceiling Flange and Nipple
No. 139A—Without Nipple

Consists of No. 138 ring, No. 128 ceiling flange with 4-inch nipple; for longer nipple order parts separately.

Pipe Size In.	No. 139 Plain Per 100	No. 139 Galv. Per 100	No. 139A Plain Per 100	No. 139A Galv. Per 100
⅜	$33.00	$40.00	$26.00	$31.00
½	34.00	42.00	27.00	33.00
¾	36.00	43.00	29.00	34.00
1	37.00	45.00	30.00	36.00
1¼	42.00	51.00	35.00	42.00
1½	54.00	66.00	47.00	57.00
2	67.00	81.00	60.00	72.00
2½	144.00	156.00	136.00	146.00
3	149.00	161.00	141.00	151.00

No. 138 Grinnell Extension Split Rings

Sizes ⅜ to 2 inches, tapped for ¼-inch pipe size; 2½ to 3 inches, ½ inch.

Pipe Size Inches	Plain per 100	Galvanized per 100
⅜	$16.00	$19.00
½	17.00	21.00
¾	19.00	22.00
1	20.00	24.00
1¼	25.00	30.00
1½	37.00	45.00
2	50.00	60.00
2½	110.00	115.00
3	115.00	120.00

No. 106 Grinnell Adjustable Pipe Hanger Clips

Underwriters' Approved

Made of malleable iron.

Adjustable clip ring allows about 1½-inch adjustment which can be made easily after pipe is installed. Rods furnished with 2½-inch machine thread. Two holes for No. 18 screws in each base.

Standard finish, black; galvanized on order only.

Size Pipe In.	Black Per 100	Galv. Per 100	Square Head Hanger Rod Inches Diam.	Square Head Hanger Rod Inches Length	Min.-Max. Distances Ceiling to Pipe Center Inches
¾	$44.00	$54.00	⅜	6¼	8 – 9⅝
1	47.50	58.00	⅜	6¾	8½–10⅛
1¼	48.50	59.50	⅜	6¾	8¾–10⅜
1½	51.00	62.50	⅜	7	9 –10⅝
2	56.00	68.50	⅜	7¼	9½–11⅛

No. 105 Grinnell Adjustable Clip Rings

Malleable Iron

Underwriters' Approved

Long shank permits about 1½-inch adjustment.

Strong and light in weight.

Regularly furnished black.

Pipe Size....in.	¾	1	1¼	1½	2
Black....per 100	$15.00	$18.00	$19.00	$21.00	$26.00
*Galvanized....per 100	16.50	20.00	21.50	24.00	30.00
Size Rod....in.	⅜	⅜	⅜	⅜	⅜
Length Shank....in.	2	2	2	2	2
I.D. of Ring....in.	1 3/16	1 7/16	1 13/16	2 1/16	2 9/16

*On special order only.

No. 260 Grinnell Adjustable Wrought Steel Clevis Hangers

Sizes ¾ to 8-Inch—Underwriters' Approved

Provide for a vertical adjustment of at least 1½ inches, which adjustment may be made either before or after pipe is in place. No temporary support of pipe line is necessary while adjustments are being made. Hanger rods and supporting nuts to be ordered separately.

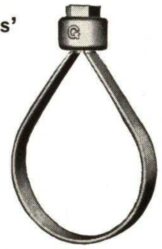
Pipe Size In.	Per 100	Vertical Adjustment In.	Diameter Rod In.
¾	$23.00	1½	⅜
1	24.00	1½	⅜
1¼	28.00	1½	⅜
1½	30.00	1½	⅜
2	32.00	1½	⅜
2½	35.00	1¾	½
3	46.00	1¾	½
3½	58.00	1¾	½
4	64.00	1¾	⅝
5	74.00	2	⅝
6	87.00	2	¾
8	135.00	2	⅞
*10	300.00	2⅛	⅞
*12	400.00	2⅜	⅞
*14	500.00	2⅝	1
*16	700.00	3¼	1

*With pipe spacer on bolt.

Grinnell Adjustable Wrought Ring Hangers and Pipe Rings

Underwriters' Approved

No. 95 Ring Hanger

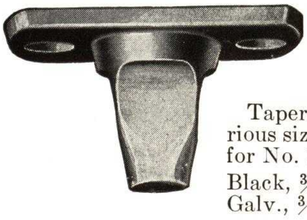


No. 97 Pipe Ring

No. 97 pipe ring consists of a steel ring supported by a malleable adjusting nut threaded for hanger rod. Before rod is screwed through nut, the ring may be sprung together for removal from nut. No. 95 ring hanger is a combination of No. 97 pipe ring and No. 96 flattened end bolt. The nut of Nos. 95 and 97 is black malleable iron, and the No. 96 flattened end bolt used with No. 97 to make No. 95, is black steel. The band is made from electro galvanized wrought steel.

*Copper-plated.

Pipe Size Inches	No. 95 per 100	No. 97 per 100	*No. 95 C.P. per 100	*No. 97 C.P. per 100	Bolt Size Inches	Ctr. of Pipe to Top of Nut Inches	Vertical Adjustment Inches
½	$20.50	$9.50	$28.80	$14.80	⅜	2½	1⅛
¾	20.75	9.75	29.30	15.30	⅜	2⅝	1⅛
1	21.00	10.00	29.80	15.80	⅜	2 11/16	1⅛
1¼	21.25	10.25	30.30	16.30	⅜	2 15/16	1⅛
1½	21.50	10.50	30.80	16.80	⅜	3	1 3/16
2	22.00	11.00	31.75	17.75	⅜	3¼	1⅛
2½	30.50	16.50	49.50	29.00	½	3 13/16	1¼
3	31.50	17.50	51.00	30.50	½	4 3/16	1 5/16
3½	32.00	18.00	52.50	32.00	½	4 7/16	1 5/16
4	51.00	33.00	93.00	63.00	⅝	5⅜	1 11/16
5	54.00	36.00	100.00	70.00	⅝	5 15/16	1 11/16
6	80.00	56.00	154.00	108.00	¾	7⅛	2 3/16
8	163.00	91.00	292.00	186.00	⅞	8 13/16	2⅝



No. 116 Grinnell Adjustable Clip Bases

Malleable Iron

Underwriters' Approved

Tapered formation allowing various size bolt heads used. Two holes for No. 18 screws in each base.

Black, ⅜ In.	per 100	$21.60
Galv., ⅜ In.	per 100	24.10

No. 128 Grinnell Ceiling Flanges

Malleable Iron

Flange No.	0	1	2	3	4
No. 128, Plain..per 100	**$10.00**	**$10.00**	**$14.00**	**$26.00**	**$26.00**
No. 128, Galv..per 100	**12.00**	**12.00**	**16.50**	**31.00**	**31.00**
Tapped for Pipe Size in.	⅛	¼	⅜	½	¾
No. of Screws	2	2	2	4	4
Size No. Screws	12	12	14	18	18

No. 153 Grinnell Malleable Iron Pipe Hanger Flanges

Underwriters' Approved for Pipes 8 Inches and Smaller

Designed for use on level ceilings. It provides an adjustment of 1 inch where rod enters flange.

Size No. 1 has two holes for wood screws. Nos. 2, 3, 4 and 5 have three holes for coach screws.

Size No.	1	2	3	4	5
No. 153......per 100	**$27.00**	**51.00**	**68.00**	**82.00**	**137.00**
Pipe Size.....inches	¾–2	2½–3½	4–5	6	8–12
Rod Diam....inches	⅜	½	⅝	¾	⅞
Flange Diam..inches	2⅞	4	4¾	5¼	6

No. 126 Grinnell 1-Hole Pipe Clamps

Designed for supporting standard conduit, cable or wrought iron and steel pipe on walls or sides of beams.

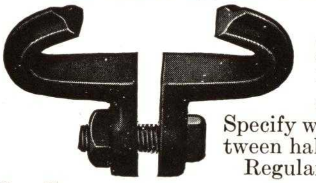
Made of malleable iron.

Conduit or Pipe Size Nominal I.D. Inches	**Black** per 100	**Galv.** per 100	Cable Size or O.D. of Conduit Inches	Diam. Screw Hole Inches	Expansion Case or Screw Anchor Inches
⅜	**$3.50**	**$3.75**	.67	¼	3/16x1
½	**4.05**	**4.45**	.84	5/16	¼x1½
¾	**5.40**	**5.90**	1.05	5/16	¼x1½
1	**6.75**	**7.50**	1.31	5/16	¼x1½
1¼	**11.50**	**12.50**	1.66	⅜	¼x1½
1½	**16.00**	**17.50**	1.90	7/16	⅜x2
2	**35.60**	**38.00**	2.37	7/16	⅜x2
2½	**63.85**	**68.00**	2.87	11/16	⅝x3
3	**87.55**	**94.00**	3.50	11/16	⅝x3
3½	**131.00**	**140.00**	4.00	¾	⅝x3½
4	**191.50**	**204.00**	4.50	¾	⅝x3½

No. 131 Grinnell I-Beam Clamps

Malleable Iron

Underwriters' Approved For Pipe Sizes 6 Inches and Smaller



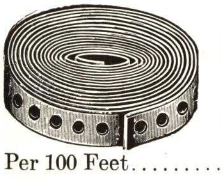
For use on American Standard I-beams. Size bolt, ⅜-inch. Distance from bottom of beam to center bolt approximately 1¼ inches. Specify width of I-beam and space between halves of clamps. Regularly furnished in black.

Beam Flg. Width Inches	**Black** Per 100	***Galv.** Per 100	Beam Flg. Width Inches	**Black** Per 100	***Galv.** Per 100
2	**$31.00**	**$36.00**	**4½**	**$40.00**	**$47.00**
2½	**33.00**	**38.00**	**5**	**43.00**	**51.00**
3	**36.00**	**42.00**	**5½**	**44.00**	**53.00**
3½	**38.00**	**45.00**	**6**	**53.00**	**62.00**
4	**39.00**	**46.00**	...	.....	.....

*On special order only.

Paine Perforated Hanger Iron

Plumbers' Tape



Size ¾ inch x 20 gage. Has hole size, ¼ inch; center to center of holes, ½ inch; safe load, 500 pounds.

Fabricated from zinc plated stock. No. 500A. In 10-foot coils. Individually boxed.

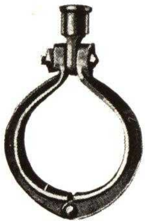
Weight per 1000 feet, 80 pounds.

Per 100 Feet.. **$4.00**

No. 940 Modern Hinge Hangers

With Malleable Iron Socket

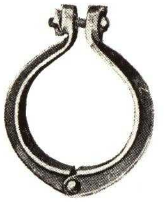
Of malleable iron. Specify tapping.



Pipe Size In.	Per 100	Tapping, Inches: For Pipe Thrd.	For Bolt Thrd.	For Spec. Bolt Thrd.
*** ½**	**$21.50**	⅛	½	⅜
*** ¾**	**23.50**	⅛	½	⅜
***1**	**24.50**	⅛	½	⅜
1¼	**27.00**	¼	½	⅜
1½	**30.00**	¼	½	⅜
2	**32.00**	¼	½	⅜
2½	**39.00**	¼	½	½
3	**45.00**	¼	½	½
3½	**53.50**	⅜	½	½
4	**63.50**	⅜	½	⅝
†5	**88.00**	⅜	⅝	⅝
†6	**103.00**	⅜	⅝	¾
8	**173.00**	½	¾	¾
10	**318.00**	½	¾	¾

Pipe sockets which can be supplied at no extra cost: *¼″; †½.

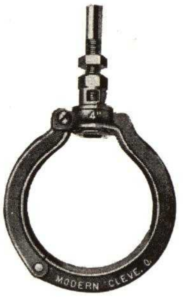
No. 600 Modern Hinged Hangers



Made of malleable iron.

Pipe Size In.	Per 100	Pipe Size In.	Per 100	Pipe Size In.	Per 100
½	**$15.00**	**2**	**$25.00**	**5**	**$75.00**
¾	**17.00**	**2½**	**32.00**	**6**	**90.00**
1	**18.00**	**3**	**38.00**	**8**	**160.00**
1¼	**20.00**	**3½**	**45.00**	**10**	**300.00**
1½	**23.00**	**4**	**55.00**	..	......

No. 930 Modern Adjustable Swivel Hangers



Made of malleable iron.

Turn swivel nut to raise or lower the pipe. Can be raised or lowered without removing or raising the pipe from the hanger.

Locknut is used under conditions of excessive vibration. Locknut must be ordered extra.

Specify tapping wanted.

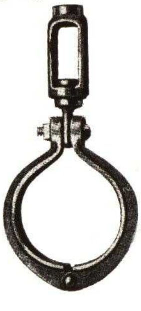
Pipe Size In.	Per 100	Tapping, Inches: For Pipe Thrd.	For Bolt Thrd.	For Spec. Bolt Thrd.	Top of Swivel to Top of Pipe In.	Top of Swivel to Bot. of Pipe In.	Top of Swivel to Ctr. of Pipe In.
¾	**$41.40**	¼	½	⅜	1 5/16	3	2½
1	**43.40**	¼	½	⅜	2	3⅜	2 11/16
1¼	**46.40**	¼	½	⅜	2	3⅝	2 13/16
1½	**52.40**	¼	½	⅜	2	3⅞	2 15/16
2	**58.40**	¼	½	⅜	2⅛	4½	3 5/16
2½	**67.20**	⅜	½	½	2¾	5 9/16	4⅛
3	**77.20**	⅜	½	½	2¾	6 3/16	4 7/16
3½	**105.20**	⅜	½	½	2¾	6⅝	4⅝
4	**124.00**	⅜	½	⅝	2¾	7 3/16	4 15/16
5	**172.00**	⅜	⅝	⅝	3¾	9 5/16	6½
6	**218.00**	⅜	⅝	¾	3¾	10⅜	7

No. 25 Modern Hinge Hangers

With Swivel Adjuster

Made of malleable iron.

Specify tapping.



Pipe Size In.	Per 100	Tapping, Inches: For Pipe Thrd.	For Bolt Thrd.	For Spec. Bolt Thrd.
½	**$35.00**	¼	½	⅜
¾	**37.00**	¼	½	⅜
1	**38.00**	¼	½	⅜
1¼	**40.00**	¼	½	⅜
1½	**43.00**	¼	½	⅜
2	**45.00**	¼	½	⅜
2½	**52.00**	⅜	½	½
3	**58.00**	⅜	½	½
3½	**65.00**	⅜	½	½
4	**81.50**	⅜	½	⅝
5	**101.50**	⅜	⅝	⅝
6	**116.50**	⅜	⅝	¾
8	**215.50**	½	⅝	¾
10	**355.60**	½	¾	¾

Modern Hanger Rods

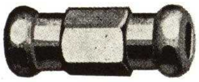
No. 810—With 2½-Inch R.H. Thread Each End

Length Rod Inches	Per 100 — Diameter, Inches — ⅜	½	⅝	¾	⅞
8	$11.25	$16.25	$20.00	$23.00	$28.00
10	12.00	17.50	21.00	26.00	32.00
12	13.00	19.00	23.00	29.00	36.00
14	14.00	20.50	25.00	32.00	40.00
18	16.00	23.00	29.50	38.00	48.00
24	18.50	27.50	35.50	47.00	59.00
30	21.00	32.00	42.00	56.00	71.00
36	24.00	36.00	48.00	65.00	83.00
42	35.00	49.00	66.00	87.00	113.00
48	38.00	54.00	73.00	97.00	126.00
54	41.00	59.00	81.00	107.00	140.00
60	44.00	64.00	88.00	117.00	153.00
66	48.00	69.00	95.00	127.00	167.00
72	51.00	74.00	102.00	137.00	180.00

No. 811—With 2½-Inch R.H. Thread One End Only

8	$7.75	$11.75	$15.50	$18.00	$23.00
10	8.50	13.00	16.50	21.00	27.00
12	9.50	14.50	18.50	24.00	31.00
14	10.50	16.00	20.50	27.00	35.00
18	12.50	18.50	25.00	33.00	43.00
24	15.00	23.00	31.00	42.00	54.00
30	17.50	27.00	37.00	51.00	66.00
36	20.00	31.00	43.00	60.00	78.00
42	31.00	44.00	61.00	81.00	107.00
48	34.00	49.00	68.00	91.00	120.00
54	37.00	54.00	76.00	101.00	134.00
60	40.00	59.00	83.00	111.00	147.00
66	44.00	64.00	90.00	121.00	161.00
72	47.00	69.00	97.00	131.00	174.00

No. 825 Modern Rod Couplings



Made of malleable iron.

Size No.	1	2	3	4
No. 825 ... per 100	$18.00	25.00	35.00	50.00
Bolt Thread ... inches	⅜	½	⅝	¾

No. 80 Modern Sockets

Standard Pattern

Made of malleable iron.

Size No.	Per 100	Pipe Thread In.	Size No.	Per 100	Bolt Thread In.
1	$6.50	⅛	6	$6.50	⅜
2	7.00	¼	7	7.00	½
3	8.50	⅜	8	8.50	⅝
4	13.00	½	9	13.00	¾
5	18.00	¾	..	.....	..

No. 630 Modern Clevis Sockets

Made of malleable iron.

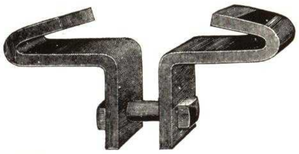
Size No.	Per 100	Pipe Thread In.	Size No.	Per 100	Bolt Thread In.
1	$13.00	⅛	6	$13.00	⅜
2	14.50	¼	7	14.50	½
3	16.00	⅜	8	16.00	⅝
4	17.50	½	9	17.50	¾
5	23.00	¾	..	.....	..

No. 50 Modern Flattened Lag Screws

Gimlet Pointed—With Bolt

Size No.	1	2	3	4
No. 50 ... per 100	$7.50	9.00	13.00	21.00
Size ... inches	5/16x3½	⅜x4	½x4½	⅝x5

No. 120 Modern I-Beam Clamps and Bolts



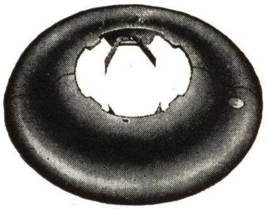
No. 1. Made of 1¼x¼-inch steel; ⅜-inch bolts.

No. 2. Made of 1½x⅜-inch steel; ½-inch bolts.

No. 3. Made of 2x½-inch steel; ¾-inch bolts.

Width I-Beam Flange Inches	No. 1 per 100	No. 2 per 100	No. 3 per 100
2	$23.50	.....	......
3	25.00	$45.00	$82.00
4	25.50	47.00	88.00
5	30.00	49.50	92.00
6	31.00	52.00	96.00
7	36.00	55.00	100.00
8	36.00	57.00	105.00

No. 3 Cadwell Improved Hinged Floor and Ceiling Plates



Closed

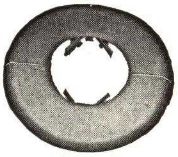
Designed with hinge joint and positive lock.

Equipped with heat-proof springs.

Also furnished in chromium plated finish.

Size In.	Black Cast Iron Each	N.P. Cast Iron Each	N.P. or Pol. Cast Brass Each
⅜	$.16	$.28	$1.00
½	.17	.29	1.00
¾	.18	.30	1.20
1	.20	.32	1.30
1¼	.22	.35	1.60
1½	.25	.38	1.80
2	.30	.45	2.00
2½	.50	.65	2.50
3	.65	.80	3.00
3½	.80	1.00	4.00
4	1.00	1.25	5.00

No. 10 Perfection Floor and Ceiling Plates



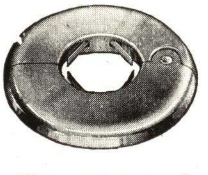
Closed

Open

Cold rolled steel. Also furnished chromium-plated.

Size In.	Black Each	N.P. Each	Size In.	Black Each	N.P. Each
¼	$.15	$.27	2½	$.50	$.65
⅜	.16	.28	3	.65	.80
½	.17	.29	3½	.80	1.00
¾	.18	.30	4	1.00	1.25
1	.20	.32	4½	1.25	1.50
1¼	.22	.35	5	1.50	1.75
1½	.25	.38	6	1.75	2.00
2	.30	.45	...	....	....

No. 40 Cadwell Hinged Floor and Ceiling Plates



Tempered springs to hold plate firmly to pipe.

Width of flange, 1 inch.

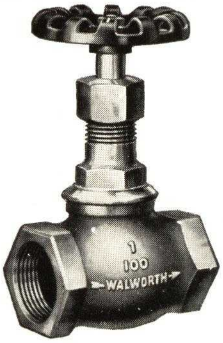
Also furnished in chromium-plated finish.

Size Inches	Black Sheet Steel Each	N.P. Sheet Steel Each	N.P. or Pol. Brass Each
⅜	$.16	$.28	$.60
½	.17	.29	.62
¾	.18	.30	.65
1	.20	.32	.72
1¼	.22	.35	.80
1½	.25	.38	.85
2	.30	.45	1.00
2½	.50	.65	1.50
3	.65	.80	1.80
3½	.80	1.00	2.25
4	1.00	1.25	2.75

Walworth Bronze Globe and Angle Valves

Rising Stem—Screwed Bonnet

Screwed Ends
100 Pounds Service Steam Pressure
200 Pounds Hydrostatic Test Pressure



No. 50, Globe

For general low pressure service lines handling steam, oil, water, or gas.

Meets chemical and physical requirements of A.S.T.M. Specification B-62, or 85-5-5-5.

Full-way bronze disc and seat. Valve can be repacked under pressure when fully opened.

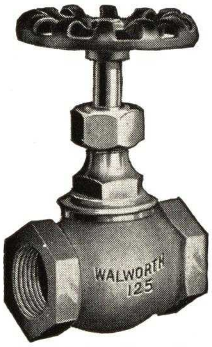
Available with lock shields.

	No. 50 Globe		No. 51 Angle	
Size In.	Each	End to End Inches	Each	Ctr. to End Inches
1/4	$.65	1 5/8	$.65	13/16
3/8	.70	1 3/4	.75	15/16
1/2	.85	2 1/8	.85	1 1/8
3/4	1.05	2 1/2	1.05	1 1/4
1	1.30	2 15/16	1.50	1 7/16
1 1/4	1.85	3 1/2	2.00	1 11/16
1 1/2	2.40	3 15/16	2.70	1 15/16
2	3.50	4 3/4	4.10	2 5/16

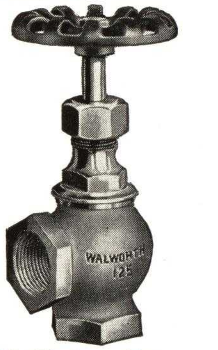
Walworth Bronze Globe and Angle Valves

Standard Pattern

Screwed Ends
For 125 Pounds Steam Working Pressure
For Service on Saturated Steam, and Non-Shock Cold Oil, Water or Gas
Hydrostatic Shell Test 250 Pounds



No. 58, Globe Valve



No. 59, Angle Valve

Can be repacked while under pressure if valve is wide open.

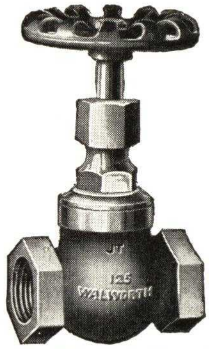
	No. 58, Globe		No. 59, Angle		
Size Inches	Each	End to End Inches	Each	Center to End Inlet Inches	Center to End Outlet Inches
1/8	$1.80	1 13/32	$1.80	45/64	45/64
1/4	1.80	1 27/32	1.80	61/64	61/64
3/8	1.90	2 1/16	1.90	1 1/32	31/32
1/2	2.40	2 9/32	2.40	1 9/32	1 9/64
3/4	3.00	2 13/16	3.00	1 15/32	1 15/32
1	3.60	3 9/32	3.60	1 5/8	1 9/16
1 1/4	5.00	3 13/16	5.00	2 1/8	1 31/32
1 1/2	7.00	4 1/4	7.00	2 9/32	2 1/32
2	10.60	4 29/32	10.60	2 9/16	2 9/16
2 1/2	20.00	5 13/16	20.00	2 29/32	2 29/32
3	27.50	6 3/4	27.50	3 11/32	3 11/32

Walworth Special Jenkins Type Bronze Globe and Angle Valves

Renewable Composition Disc

Red Enameled Non-Heating Hand Wheel

For 125 Pounds Steam Working Pressure
For Saturated Steam and Non-Shock Service on Cold Oil, Water, Gas or Air



No. 280, Globe Valve

No. 281, Angle Valve

Can be repacked while under pressure when valve is wide open.

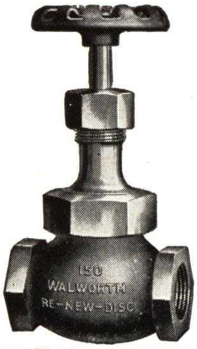
Unless otherwise specified, Walworth Jenkins Type Valves will be furnished with hard disc for steam. When wanted for cold water or air, such service should be specified and soft discs will be furnished at slight advance in price.

Size Inches	Each	Size Inches	Each	Size Inches	Each
1/4	$2.60	3/4	$4.70	1 1/2	$12.00
3/8	3.00	1	6.60	2	19.00
1/2	3.60	1 1/4	8.60	...	.....

Walworth Re-New-Disc Bronze Globe and Angle Valves

Renewable Asbestos Disc—Rising Stem—Union Bonnet

Screwed Ends
150 Pounds Service Steam Pressure at 500°F.
300 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure



No. 95, Globe,

Regularly furnished with hard asbestos composition all-purpose disc, suitable for temperatures up to 500°F., and resistant to oil and gasoline at atmospheric temperatures.

Stuffing box has a gland, and is packed with molded packing.

Valve can be repacked under pressure when fully open.

No. 96, Angle

	No. 95, Globe		No. 96, Angle	
Size Inches	Each	End to End Inches	Each	Center to End Inches
1/4	$2.60	2 1/16	$2.60	15/16
3/8	3.00	2 5/16	3.00	1 1/16
1/2	3.60	2 11/16	3.60	1 1/4
3/4	4.70	3 3/16	4.70	1 7/16
1	6.60	3 3/4	6.60	1 3/4
1 1/4	8.60	4 1/4	8.60	2 1/16
1 1/2	12.00	4 3/4	12.00	2 1/4
2	19.00	5 7/8	19.00	2 3/4
2 1/2	34.00	6 3/4	.....	...
3	48.00	8	.....	...

Walworth Bronze Check Valves

Horizontal and Vertical

Screwed Ends

100 Pounds Service Steam Pressure

200 Pounds Hydrostatic Shell Test

1
100
WALWORTH

Size In.	No. 52 Horizontal Each	No. 52 Horizontal End to End, In.	No. 54 Vertical Each	No. 54 Vertical End to End, In.
¼	$.75	1⅝	$.85	1 15/16
⅜	.80	1¾	.90	1 15/16
½	1.00	2⅛	1.10	2⅛
¾	1.25	2½	1.35	2 9/16
1	1.50	2 15/16	1.60	2⅞
1¼	1.90	3½	2.30	3 5/16
1½	2.70	3 15/16	3.25	3⅞
2	4.00	4¾	5.00	4⅜

Walworth Bronze Check Valves

Horizontal and Vertical

Screwed Ends

125 Pounds Service Steam Pressure

125
WALWORTH

No. 73, Horizontal

Size In.	No. 73 Horizontal Each	No. 73 Horizontal End to End, In.	No. 75 Vertical Each	No. 75 Vertical End to End, In.
⅛	$1.60	1 27/32	....	....
¼	1.60	1 27/32	$1.80	1 23/32
⅜	1.75	2 1/16	1.90	1⅝
½	2.16	2 9/32	2.40	2
¾	2.75	2 13/16	3.00	2 5/16
1	3.20	3 9/32	3.60	2 7/16
1¼	4.50	3 13/16	5.00	3
1½	6.30	4¼	7.00	3 7/16
2	9.50	4 29/32	10.60	3 13/16

Prices on flanged check valves furnished upon application.

No. 97 Walworth Re-New-Disc Bronze Check Valves

Horizontal

Renewable Asbestos Disc

Screwed Ends

150 Pounds Service Steam Pressure
300 Pounds Non-Shock Service Oil, Water, or Gas Pressure

150
WALWORTH
RE-NEW-DISC

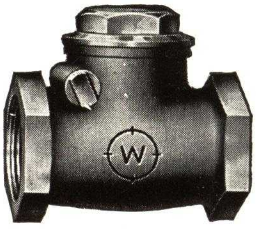
With bronze bonnet ring.

Unless otherwise specified, valves will be furnished with asbestos disc for steam.

Size In.	Each	End to End In.	Size In.	Each	End to End In.
¼	$2.60	2 1/16	1	$5.80	3¾
⅜	2.90	2 5/16	1¼	8.00	4¼
½	3.20	2 11/16	1½	11.00	4¾
¾	4.20	3 3/16	2	16.00	5⅞

No. 400 Walworth Low Pressure Bronze Swing Check Valves

Screwed Ends
100 Pounds Steam Working Pressure
For Saturated Steam and Non-shock Service on Cold Oil, Water or Gas

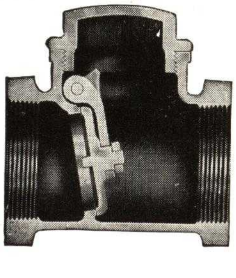


Size.................inches	½	¾	1	1¼	1½	2
Each..........................	$1.75	2.05	2.40	2.85	3.60	5.20
End to End..........inches	2¼	2⅝	3¼	3⅝	4	4 11/16

Walworth Bronze Swing Check Valves

Bronze Disc—125 Pounds Service Steam Pressure
Leather Disc—150 Pounds Non-Shock Service Cold Water Pressure
For Horizontal or Vertical Flow

Bronze disc valves for hot water or steam. Leather disc valves for cold water. Can be fitted with rubber disc, if desired.

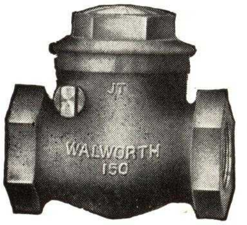


Size In.	No. 406 Bronze Disc Each	No. 407 Leather Disc Each	End to End, In.
⅜	$4.50	$5.75	2
½	4.80	6.30	2¼
¾	5.40	6.90	2⅝
1	5.60	7.20	3
1¼	7.30	9.30	3½
1½	9.50	12.00	3⅞
2	13.50	16.50	4⅝
2½	30.00	.....	5½
3	45.50	.....	6¼

No. 412 Walworth Jenkins Type Bronze Swing Check Valves

Renewable Composition Disc

150 Pounds Working Steam Pressure
300 Pounds Non-Shock Working Oil, Water or Gas Pressures, at Ordinary Air Temperatures
For Horizontal or Vertical Flow



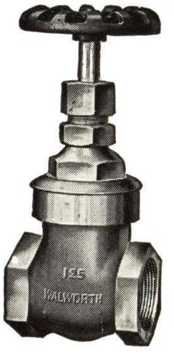
Regularly furnished with hard disc for steam. When wanted for cold water or air, soft disc will be furnished.

Size In.	Screwed Each	End to End In.	Size In.	Screwed Each	End to End In.
⅜	$4.00	2 7/16	1¼	$11.00	4¼
½	4.40	2¾	1½	14.30	4⅞
¾	5.80	3 5/16	2	21.40	5¾
1	7.80	3 13/16	...	.....	...

No. 4 Walworth Bronze Screwed Gate Valves

Solid Wedge—Non-Rising Stem with Gland

125 Pounds Service Steam Pressure



For general service lines handling steam, and on cold oil, water, and gas.

Equipped with non-heating hand wheel. Disc is a one-piece wedge guided by ribs in the body.

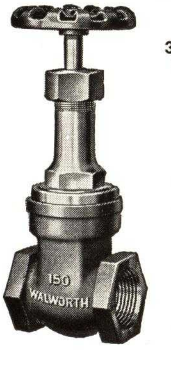
Can be repacked under pressure when wide open.

The increased end to end dimension allows ample clearance between the end of the pipe and the valve seat.

Size In.	Each	End to End, In.	Size In.	Each	End to End, In.
¼	$2.40	1 21/32	1¼	$6.00	3⅛
⅜	2.40	1¾	1½	8.00	3 9/16
½	2.60	2⅛	2	11.00	3 15/16
¾	3.30	2 5/16	2½	19.00	4½
1	4.40	2 11/16	3	28.00	5¼

No. 12 Walworth Bronze Screwed Gate Valves

Double Disc—Taper Seat—Rising Stem with Gland



150 Pounds Service Steam Pressure
300 Pounds Non-Shock Service Oil, Water, or Gas Pressure at Ordinary Air Temperatures

Non-heating hand wheel.

This valve opens to the left.

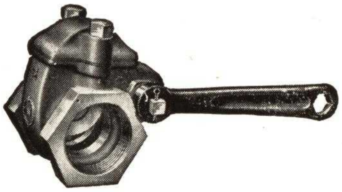
Can be repacked under pressure when wide open.

Size In.	Each	End to End, In.	Size In.	Each	End to End, In.
¼	$3.20	1⅞	1¼	$8.00	3 7/32
⅜	3.20	2	1½	10.00	3 17/32
½	3.60	2 3/16	2	16.00	3 15/16
¾	4.20	2 7/16	2½	26.00	4 7/16
1	5.80	2 25/32	3	38.00	5⅛

No. 7 Walworth Bronze Screwed Gate Valves

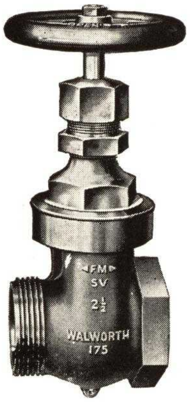
Lever Throttle—Double Disc
Quick Opening—Bolted Cap
75 Pounds Service Steam Pressure
100 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure

For service on saturated steam, and on oil, water or gas. Light pressure, quick operating. Split wedge type discs carried by substantial arm; seat angle gives assurance that valve, when closed, is locked.



Size In.	Each	End to End, In.
½	$6.00	2
¾	6.60	2⅛
1	8.50	2 7/16
1¼	11.00	2 9/16
1½	13.00	2⅞
2	20.00	3 1/16

No. 15 Walworth Bronze Hose Gate Valves



Underwriters' Approved Type
Non-Rising Stem with Gland
Solid Wedge—Open to Left
175 Pounds Working Water Pressure

Has rough body, iron wheel.

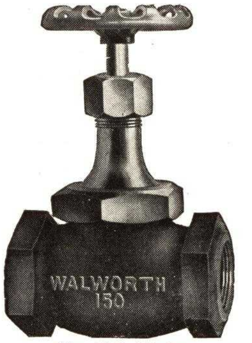
Complete thread information must be supplied with order.

Size Inches	Each	*Extra for Finished Brass Cap and Chain
1	$6.70	$3.50
1½	12.50	5.20
2	18.00	7.20
2½	30.00	10.00

*Valves with nickel-plated caps, extra.

Walworth Iron Body Ferro Globe and Angle Valves

Semi-Plug Type—Bronze Trim—Rising Stem
Union Bonnet
Screwed Ends
150 Pounds Service Steam Pressure
250 Pounds Non-Shock Service Cold Oil, Water or Gas Pressure



No. 235, Globe

No. 236, Angle

Valves can be repacked under pressure when fully opened. Has non-heating hand wheels. Sizes 2½ inches and larger have round rings with slots for spanner wrench.

	No. 235, Globe		No. 236, Angle	
Size Inches	Each	End to End Inches	Each	Center to End Inches
¼	$3.50	2 15/32	$3.50	1 3/16
⅜	3.60	2⅝	3.60	1 5/16
½	4.00	3	4.00	1 7/16
¾	5.00	3¾	5.00	1⅝
1	6.00	4¼	6.00	1 15/16
1¼	8.60	4 15/16	8.60	2¼
1½	12.00	5½	12.00	2 7/16
2	19.00	6 9/16	19.00	3
2½	26.00	7½	26.00	. . .
3	35.00	8½	35.00	. . .

Walworth Iron Body Globe and Angle Valves

Yoke Top—Bronze Mounted or All Iron
For 125 Pounds Service Steam Pressure

No. 906, Globe, Screwed

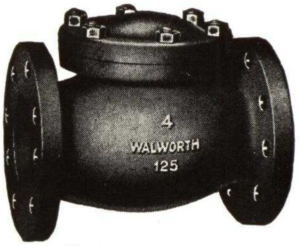
No. 907, Angle, Screwed

	Screwed				Flanged				
Size In.	Bronze Mounted No. 906 Globe No. 907 Angle Each	All Iron No. 906½ Globe No. 907½ Angle Each	Globe End to End In.	Angle Ctr. to End In.	Bronze Mounted No. 906F Globe No. 907F Angle Each	All Iron No. 906½F Gl3be No. 907½F Angle Each	Globe Face to Face In.	Angle Ctr. to Face In.	Diam. Flange In.
2	$7.00	$7.00	6½	3¼	$8.60	$8.60	8	4	6
2½	9.00	9.00	7	3½	10.75	10.75	8½	4¼	7
3	12.50	12.50	8	4	15.00	15.00	9½	4¾	7½
3½	15.25	. . . . .	9	4½	18.50	. . . . .	10½	5¼	8½
4	19.00	. . . . .	10	5	22.50	22.50	11½	5¾	9
5	. . . . .	. . . . .	. .	. .	31.00	. . . . .	13	. . .	10
6	. . . . .	. . . . .	. .	. .	42.00	. . . . .	14	. . .	11
8	. . . . .	. . . . .	. .	. .	77.00	. . . . .	17	. . .	13½
10	. . . . .	. . . . .	. .	. .	123.00	. . . . .	20	10	16

Walworth Iron Body Check Valves

Horizontal—Bronze Mounted
For 125 Pounds Steam Working Pressure

No. 920, Screwed



No. 920F, Flanged

Flanged valves are shipped faced and drilled unless otherwise specified. No reduction in price for faced only.

For larger sizes, swing check valves are recommended.

	No. 920, Screwed		No. 920F, Flanged		
Size In.	Each	End to End In.	Each	Face to Face In.	Diam. Flanges In.
2	*$3.60	6½	. . . .	. . .	.
2½	6.50	7	. . . .	. . .	.
3	8.90	8	$11.50	9½	7½
4	14.25	10	18.00	11½	9
5	. . . . .	. .	26.00	13	10
6	. . . . .	. .	35.00	14	11

*Furnished with bronze screwed cap.

Walworth Iron Body Swing Check Valves

Bronze Mounted or All Iron

125 Pounds Service Steam Pressure
Non-Shock Service Cold Oil, Water, or Gas Pressure:
12 Inches and Smaller, 200 Pounds
14 Inches and Larger, 150 Pounds

6
WALWORTH
125

No. 928, Screwed

6
WALWORTH
125

No. 928F, Flanged

Discs swing completely out of the waterway.

	Screwed				Flanged, Faced and Drilled				
Size In.	No. 928 With Bronze Faced Disc Each	No. 928½ All Iron Each	Leather Disc Add Each	End to End In.	No. 928F With Bronze Faced Disc Each	No. 928½F All Iron Each	Leather Disc Add Each	Face to Face In.	Diam. Flge. In.
2	$11.00	$11.00	$1.00	7¼	$13.00	$13.00	$1.00	8	6
2½	12.00	.....	1.50	8⅝	14.50	14.50	1.50	8½	7
3	13.50	13.50	2.00	9¼	17.00	17.00	2.00	9½	7½
3½	17.50	.....	2.50	9¾	21.00	.....	2.50	10½	8½
4	20.00	20.00	3.00	10¾	24.00	24.00	3.00	11½	9
5	30.00	.....	4.00	12¼	34.00	34.00	4.00	13	10
6	36.00	.....	4.00	13⅜	41.00	41.00	4.00	14	11
8	.....	.....	....	....	75.00	75.00	7.50	19½	13½
10	.....	.....	....	....	115.00	.....	10.00	24½	16
12	.....	.....	....	....	168.00	.....	12.00	27½	19
14	.....	.....	....	....	340.00	.....	.....	28	21
16	.....	.....	....	....	450.00	.....	.....	32	23½

No. 934 Walworth Iron Body Swing Check Valves

Hub Ends—Bronze Mounted

200 Pounds Cold Water Service Pressure
300 Pounds Hydrostatic Shell Test Pressure

6
WALWORTH
200

Suitable for A.W.W.A. Class D cast iron pipe.

Furnished with leather disc unless otherwise specified.

Size Inches	Each	End to End Hub Inches	Inside Diameter of Hub Inches	Depth of Hub Inches
3	$19.00	12¼	4¾	2¾
4	27.00	14	5 13/16	3
6	45.00	16½	7 15/16	3
8	82.50	21¼	10⅛	3½
10	125.00	24	12 3/16	3½
12	180.00	27¼	14 5/16	4

Walworth Iron Body Wedge Gate Valves

Bronze Mounted

No. 701F, Non-Rising Stem

No. 702F, Rising Stem—Outside Screw and Yoke

Flanged Ends

25 Pounds Service Steam Pressure or Cold Gas Pressure

Sizes 12 to 24 Inches: 50 Pounds Non-Shock Service Cold Oil or Water Pressures

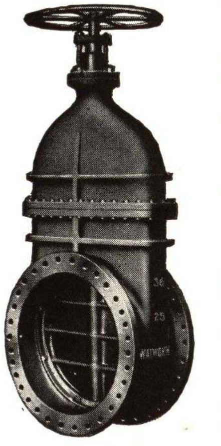
Sizes 30 and 36 Inches: 43 Pounds Non-Shock Service Cold Oil or Water Pressures

Used on exhaust or low pressure steam and on low pressure water and gas.

Regularly furnished with bronze stems, bronze screwed in seat rings, and bronze disc faces. Stuffing box is packed with a good grade of packing suitable for the various services for which the valve is recommended.

This valve undergoes a hydrostatic shell test of 75 pounds per square inch.

Furnished faced and drilled.



No. 701F
Non-Rising Stem

Size Inches	No. 701F Each	No. 702F Each	Face to Face Inches	Diam. Flange Inches
12	$133.00	$180.00	11	19
14	181.00	255.00	13½	21
16	260.00	350.00	14	23½
18	350.00	470.00	14½	25
20	425.00	565.00	15½	27½
24	600.00	775.00	17	32
30	1100.00	1400.00	21	38¾
36	1700.00	2150.00	24	46

Walworth Iron Body Saddle Gate Valves

Bronze Mounted or All Iron—Rising Stem—Wedge Gate

No. 709, Screwed

Screwed—¼ to 2 Inches
150 Pounds Service Steam Pressure
225 Pounds Non-Shock Cold Oil, Water, or Gas

Flanged—1 to 4 Inches
125 Pounds Service Steam Pressure
200 Pounds Non-Shock Cold Oil, Water, or Gas

Screwed or Flanged—2½ to 4 Inches
125 Pounds Service Steam Pressure
175 Pounds Non-Shock Cold Oil, Water or Gas

The bonnet is held securely in place by the steel saddle around the body, and can easily be removed giving access to the interior of the valve for cleaning or repair purposes.

The valves open to the left.

	Screwed				Flanged			
	No. 709 Bronze Stem		No. 711 All Iron					
Size Inches	Each	E. to E. In.	Each	E. to E. In.	No. 709F Bronze Stem Each	No. 711F All Iron Each	Face to Face In.	Diam. Flanges In.
¼	$3.50	2 3/16	$4.00	2 19/32	.....	.....	...	...
⅜	3.50	2 3/16	4.00	2 19/32	.....	.....	...	...
½	3.70	2 19/32	4.20	2 19/32	.....	.....	...	...
¾	4.50	2 11/16	4.80	2 11/16	.....	.....	...	...
1	5.00	3 3/16	5.50	3 3/16	$15.00	$16.00	4¼	4¼
1¼	6.00	3⅜	6.30	3⅜	17.00	18.00	4¾	4⅝
1½	7.00	3 15/32	7.00	3 15/32	18.00	19.00	6	5
2	10.00	4½	10.00	4½	20.00	20.00	7	6
2½	17.00	5¼	16.00	5¼	30.00	29.00	7½	7
3	21.00	5½	20.00	5½	37.00	35.00	8	7½
4	48.00	6¼	51.00	6¼	88.00	80.00	9	9

Flanged

Walworth Iron Body Gate Valves

Wedge Gate—Non-Rising Stem Bronze Mounted or All Iron

125 Pounds Service Steam Pressure
200 Pounds Non-Shock Service Cold Oil, Water, or Gas Pressures
300 Pounds, Hydrostatic Shell Test

Bronze mounted with bronze stem, seat rings, and disc faces. All iron with nickel-plated steel stem, and integral disc faces, and renewable seat rings. Flanged valves furnished faced and drilled unless otherwise ordered. No reduction in price for faced only.

Can be repacked under pressure when wide open.

	Screwed		Flanged		
Size In.	No. 719 Bronze Stem No. 720 All Iron Each	End to End In.	No. 719F Bronze Stem No. 720F All Iron Each	Face to Face In.	Diam. Flange In.
2	$10.00	6⅛	$12.00	7	6
2½	11.50	6¾	13.50	7½	7
3	14.00	7⅛	16.50	8	7½
3½	17.00	7⅜	19.50	8½	8½
4	19.00	7¾	23.00	9	9
5	27.50	8¼	31.50	10	10
6	32.50	8¾	36.50	10½	11
8	.....	...	58.00	11½	13½
10	.....	...	95.00	13	16
12	.....	...	133.00	14	19
14	.....	...	181.00	15	21
16	.....	...	260.00	16	23½

Sizes 2, 2½, 3, 4, 6, 8, 10, and 12 inches conform to A.P.I. standard 5-G-1-175 Pound.

No. 726, Screwed

Walworth Iron Body Gate Valves

Wedge Gate—Outside Screw and Yoke Bronze Mounted or All Iron

125 Pounds Service Steam Pressure
Non-Shock Service Oil, Water, or Gas Pressure at Ordinary Air Temperatures:
12 Inches and Smaller, 200 Pounds;
14 Inches and Larger, 150 Pounds

Regularly furnished with bronze stem, bronze seat rings, and disc faces. May be furnished all iron. All iron valve has nickel-plated steel stem and integral disc faces and renewable seat rings.

Sizes 12-inch and smaller (except 5-inch) conform to A.P.I. standard 5-G-1 175 pound.

This valve opens to the left. Can be repacked under pressure when wide open.

	Screwed			Flanged			
Size In.	No. 727 All Iron Each	No. 726 Bronze Stem Each	End to End In.	No. 727F All Iron Each	No. 726F Bronze Stem Each	Face to Face In.	Diam. Flanges In.
2	$19.00	$19.00	6⅛	$21.00	$21.00	7	6
2½	20.50	20.50	6¾	22.50	22.50	7½	7
3	23.50	23.50	7⅛	26.00	26.00	8	7½
3½	.....	27.00	7⅜	.....	29.50	8½	8½
4	32.50	32.50	7¾	36.50	36.50	9	9
5	45.00	45.00	8¼	49.00	49.00	10	10
6	52.00	52.00	8¾	56.00	56.00	10½	11
8	.....	.....	...	90.00	90.00	11½	13½
10	.....	.....	...	136.00	136.00	13	16
12	.....	.....	...	180.00	180.00	14	19
14	.....	.....	...	255.00	255.00	15	21
16	.....	.....	...	350.00	350.00	16	23½
18	.....	.....	...	.....	470.00	17	25
20	.....	.....	...	......	565.00	18	27½
24	.....	.....	...	......	775.00	20	32

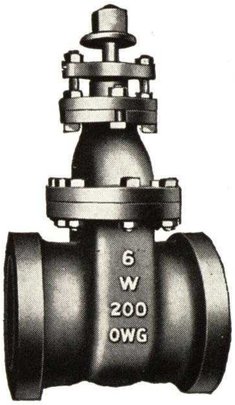
No. 734 Walworth Iron Body Wedge Gate Valves

Hub Ends—Non-Rising Stem—Bronze Mounted

Sizes 12 Inches and Smaller—200 Pounds Non-Shock Service Cold Water Pressure
300 Pounds Hydrostatic Shell Test Pressure
Sizes 14 Inches and Larger—150 Pounds Non-Shock Service Cold Water Pressure
250 Pounds Hydrostatic Shell Test Pressure

Furnished with hubs for Class D cast iron pipe. Bronze stem furnished on all sizes. Disc on the 2-inch size is all bronze, but on the larger sizes the disc is iron with bronze face rings. All sizes have a 2-inch operating nut, except the 24-inch size which has a 3-inch nut.

Valve can be repacked under pressure when wide open.



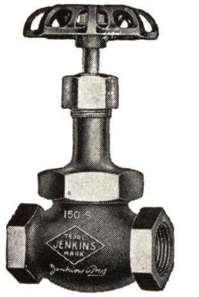
Size In.	Each	End to End In.	End to End Pipe In.	Inside Diam. of Hub In.
2	$10.00	9¼	3¾	3¼
3	14.00	9⅝	4⅛	4 21/32
4	19.00	10½	4½	5 45/64
6	32.50	11¼	5¼	7 51/64
8	54.00	13	6	10
10	90.00	13¾	6¾	12 7/64
12	125.00	14½	7½	14 13/64
14	173.00	15¼	7¼	16½
16	250.00	16	8	18 13/16
18	340.00	17	9	20 15/16
20	415.00	18	10	23
24	590.00	21	11	27¼

Hub and spigot end valve prices and dimensions furnished upon request.

Jenkins Bronze Globe and Angle Valves

Renewable Composition Disc—With Slip-On Stay-On Disc Holder—Screw-Over Bonnet

Screwed Ends
150 Pounds Steam Working Pressure
300 Pounds Non-Shock Cold Oil, Water, Gas Working Pressure
Flanged Ends
150 Pounds Steam Working Pressure
225 Pounds Non-Shock Cold Oil, Water, Gas Working Pressure



No. 106-A Globe, Screwed

Exceptionally serviceable for the control of steam, fluids and gases where tightness is essential and frequent operation is required.

The resilient composition disc assures drop-tight closure with least closing-effort.

No. 108-A Angle, Screwed

	Screwed			Flanged			
Size In.	No. 106-A Globe, No. 108-A Angle Each	Globe End to End In.	Angle Ctr. to End In.	No. 107-A Globe, No. 109-A Angle Each	Globe Face to Face In.	Angle Ctr. to Face In.	Diam. Flange In.
⅛	$2.40	1 9/16	25/32	.....	...	...	...
¼	2.60	2 3/32	1 3/64	$9.00	3	1 11/16	2½
⅜	3.00	2 11/32	1 11/64	10.20	3¼	1 13/16	2½
½	3.60	2 19/32	1 15/64	11.40	3 7/16	2¼	3½
¾	4.70	3 5/32	1 31/64	13.00	3⅞	2 7/16	3⅞
1	6.60	3 23/32	1 47/64	15.00	4⅜	2 11/16	4¼
1¼	8.60	4 7/32	1 63/64	23.00	4⅞	2⅞	4⅝
1½	12.00	4 23/32	2 15/64	28.00	5½	3 3/16	5
2	19.00	5 11/16	2 23/32	42.00	6½	3¾	6
2½	34.00	6⅝	3¼	63.00	7½	4 5/16	7
3	48.00	8	3¾	86.00	8⅞	4⅝	7½

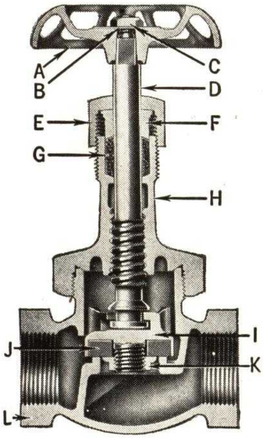
Parts for Jenkins Bronze Valves

With One Piece Screw-Over Bonnet and Slip-On Stay-On Disc Holder

Nos. 106A, 107A Globe
Nos. 108A, 109A Angle

Screwed Ends:
For 150 Pounds Steam Working Pressure
For 300 Pounds Non-Shock Cold Oil, Water or Gas Working Pressure

Flanged Ends:
For 150 Pounds Steam Working Pressure
For 225 Pounds Non-Shock Oil, Cold Water or Gas Working Pressure



A–Wheel
C–Wheel Nut
D–Spindle
E–Packing Nut
F–Gland
G–Packing
H–Bonnet
I–Disc Holder
J–Disc
K–Disc Nut
L–Body
TC–Trimming Complete
DHC–Disc Holder Complete

These 150-pound bronze globe, and angle valves, are fitted with a slip-on stay-on disc holder and a one-piece screw-over bonnet.

The valves are regularly fitted with Jenkins renewable composition discs for 150 pounds steam pressure, and when so ordered, can be furnished with Jenkins discs for air, water, gas, oils, gasoline, and other fluids.

Item TC in table is trimming complete with the exception of the body but including disc. Item DHC is slip-on stay-on disc holder complete: parts I, J and K.

No.	⅛-In. Size Each	¼-In. Size Each	⅜-In. Size Each	½-In. Size Each	¾-In. Size Each	1-In. Size Each
A	$.20	$.25	$.25	$.35	$.40	$.45
C	.03	.03	.03	.03	.03	.04
D	.30	.40	.45	.50	.55	.80
E	.30	.35	.35	.35	.45	.55
F	.05	.05	.05	.05	.10	.15
G	.03	.05	.05	.05	.08	.10
H	.85	.85	.95	1.10	1.30	1.75
I	.25	.30	.40	.45	.60	.80
K	....	.03	.03	.03	.10	.15
TC	2.10	2.35	2.60	3.00	3.65	4.90
DHC	.35	.40	.50	.60	.85	1.10

No.	1¼-In. Size Each	1½-In. Size Each	2-In. Size Each	2½-In. Size Each	3-In. Size Each
A	$.50	$.65	$.80	$1.40	$1.40
C	.06	.06	.10	.20	.20
D	.90	1.20	1.80	3.50	3.70
E	.65	.80	1.00	1.40	1.40
F	.15	.30	.40	.70	.70
G	.15	.25	.30	.40	.40
H	2.45	3.40	5.00	10.20	14.50
I	1.00	1.45	2.30	3.70	4.70
K	.20	.25	.40	.25	.30
TC	6.30	8.50	12.40	23.00	29.45
DHC	1.40	2.00	3.10	5.40	7.30

Jenkins Renewable Composition Discs

	Screw-Operated Valves Globe, Angle, Cross and Y			Pressure-Operated Valves —Check and Self-Closing—		
Service	Pressure Range, Lb.	Max. Temp.	Disc No.	Pressure Range, Lb.	Max. Temp.	Disc No.
Saturated Steam	0 to 25	267°F.	110-HS	0 to 25	298°F.	110-HS
	25 to 150	366°F.	119-AS	25 to 150	366°F.	119-AS
	150 to 250	406°F.	1120 in Sizes to 3″	150 to 250	406°F.	Metal
Hot Water	0 to 50	250°F.	110-HS	0 to 50	200°F.	294-S
	0 to 1000	300°F.	119-AS	50 to 300	250°F.	110-HS
				15 to 500	300°F.	119-AS
Cold Water	0 to 300	115°F.	294-S	0 to 50	115°F.	24-S
	300 to 1000	115°F.	110-HS	50 to 600	115°F.	294-S
				600 to 1000	115°F.	110-HS
Air and Gas	Vac. to 300	Normal	294-S	Vac. to 50	Normal	24-S
	300 to 600	Normal	110-HS	50 to 300	Normal	294-S
Oil	0 to 100	125°F.	936-A	0 to 100	125°F.	936-A
	0 to 250	250°F.	119-AS	50 to 250	250°F.	119-AS
	0 to 600	300°F.	1120 in Sizes to 3″			
Gasoline	0 to 75	Normal	936-A	0 to 75	Normal	936-A
	75 to 300	Normal	119-AS	75 to 300	Normal	119-AS

Other Services.—Specific disc recommendations will be made on receipt of detailed service information.

Valve Size In.	Nos. 110-HS 119-AS 294-S Each	No. 936-A Each	No. 24-S Each	No. 1120 Each	Valve Size In.	Nos. 110-HS 119-AS 294-S Each
¼	$.06	$.15	$.06	$.25	5	$1.60
⅜	.08	.20	.08	.35	6	2.00
½	.08	.20	.08	.35	8	2.80
¾	.10	.25	.10	.40	10	4.50
1	.12	.30	.12	.50	12	5.00
1¼	.18	.45	.18	.70	14	7.00
1½	.24	.60	.24	.85	16	8.00
2	.36	.85	.36	1.30	18	10.00
2½	.48	1.15	...	1.70	20	12.00
3	.80	1.90	...	2.65	22	15.00
3½	1.00	....	...	....	24	18.00
4	1.20	....	...	....	..	.....

Jenkins Renewable Metal Discs

For certain service conditions where metal discs are preferable to resilient compounds. Others can be supplied on receipt of information regarding requirements.

No. 269 Steam Metal Disc. Made of bronze for saturated steam at pressures up to 300 pounds per square inch and maximum temperature of 500°F.

No. 648 White Metal Disc. Made of white metal alloy for air, gas, oil, water, gasoline and kerosene at pressures up to 150 pounds.

No. 649 Nickel Alloy Disc. Recommended for superheated steam at pressures up to 300 pounds per square inch and maximum temperature of 700°F. Prices on request.

Valve Size In.	No. 269 Each	No. 648 Each	Valve Size In.	No. 269 Each	No. 648 Each	Valve Size In.	No. 269 Each	No. 648 Each
¼	$.30	$.15	1½	$.65	$1.00	5	$7.20	$7.40
⅜	.30	.20	2	1.00	1.25	6	8.00	8.75
½	.35	.20	2½	1.90	1.70	8	12.50	12.00
¾	.40	.35	3	2.70	2.40	10	17.50	16.00
1	.50	.55	3½	4.20	3.75	12	22.80	21.00
1¼	.55	.80	4	5.00	5.00	14	30.60	.....

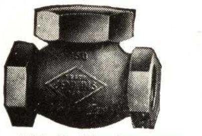
Inquiries for disc recommendations to meet special service requirements should include detailed information regarding liquids or gases to be controlled, maximum pressures and temperatures, type and number of valve in which disc is to be fitted, and other facts about any unusual conditions to be encountered or overcome.

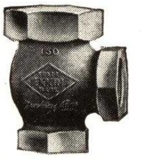
Jenkins Bronze Check Valves

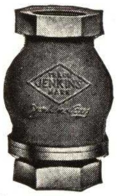
Horizontal, Angle, and Vertical

Screwed
For 150 Lb. Steam Working Pressure
For 300 Lb. Non-Shock Cold Oil, Water, Gas Working Pressure

Flanged
For 150 Lb. Steam Working Pressure
For 225 Lb. Non-Shock Cold Oil, Water, Gas Working Pressure


No. 117-A, Horizontal Screwed


No. 118-A, Angle Screwed


No. 119, Vertical Screwed

Size In.	Screwed					Flanged					
	No. 117-A Horiz. No. 118-A Angle Each	No. 119 Vertical Each	Horiz. End to End In.	Angle Ctr. to End In.	Vertical End to End In.	No. 316A Horiz. No. 317-A Angle Each	No. 120-B Vertical Each	Horiz. Face to Face In.	Angle Ctr. to Face In.	Vertical Face to Face In.	Diam Flg. In.
⅛	$2.40	$2.40	1 9/16	25/32	1¾	.....	.....	...	.	.	...
¼	2.60	2.60	2⅛	1 1/16	2⅜	.....	.....	...	.	.	...
⅜	2.90	2.90	2⅜	1 3/16	2¾	.....	.....	...	.	.	...
½	3.20	3.20	2⅝	1¼	3 3/16	$8.70	$8.70	3 7/16	2¼	3 7/16	3½
¾	4.20	4.20	3 3/16	1½	3 9/16	10.80	10.80	3⅞	2 7/16	3 13/16	3⅞
1	5.80	5.80	3¾	1¾	4⅛	14.40	14.40	4⅜	2 11/16	4½	4¼
1¼	8.00	8.00	4¼	2	4½	17.25	17.25	4⅞	2⅞	4 13/16	4⅝
1½	11.00	11.00	4¾	2¼	5¼	21.60	21.60	5½	3 3/16	5½	5
2	16.00	16.00	5 11/16	2¾	5 13/16	32.40	32.40	6½	3¾	6¼	6
2½	30.00	30.00	6⅝	3¼	7⅜	50.00	50.00	7½	4 5/16	7⅜	7
3	46.00	46.00	8	3¾	9 1/16	69.00	69.00	8⅞	4⅝	9 1/16	7½

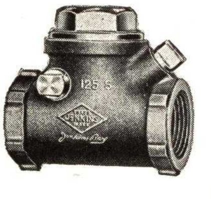
No. 92 Jenkins Bronze Swing Check Valves

Horizontal

Regrinding Bronze Disc—Screw-In Cap

Screwed Ends
125 Pounds Steam Pressure at 500°F.
250 Pounds Non-Shock Cold Oil, Water, Gas

Exceptionally serviceable for the non-return control of steam, oil, water and gas. Disc is made of high tensile bronze, carefully machined to a smooth finish.



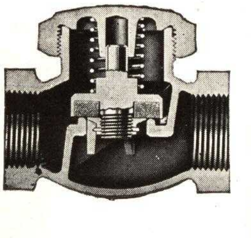
Size Inches	Each	End to End Inches	Center to Top Inches
¼	$4.50	2	1 7/16
⅜	4.50	2⅛	1 7/16
½	4.80	2⅜	1 9/16
¾	5.40	2 13/16	1 27/32
1	5.60	3 5/16	2 5/32
1¼	7.30	3 13/16	2 7/16
1½	9.50	4¼	2 23/32
2	13.50	5¼	3 9/32

No. 655-A Jenkins Bronze Check Valves

Horizontal

Spring Loaded

Screwed Ends
For 150 Pounds Steam Pressure
For 300 Pounds Non-Shock Cold Oil, Water or Gas



For non-return control of water, air, oil or gas.

The use of a phosphor bronze spring holds the disc to the seat.

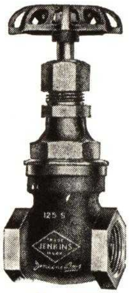
A one-piece cap that screws over the body, assists in quick disassembly for inspection and repairs.

Size In.	Each	End to End In.	Size In.	Each	End to End In.
¼	$3.20	2⅛	1	$6.50	3¾
⅜	3.50	2⅜	1¼	9.40	4¼
½	4.00	2⅝	1½	13.50	4¾
¾	4.70	3 3/16	2	18.00	5 11/16

Jenkins Bronze Gate Valves

Solid Wedge—Inside Screw—Non-Rising Spindle

125 Lb. Steam Pressure at 500°F.
200 Lb. Non-Shock Cold Oil, Water, Gas Pressure


No. 370 Screwed

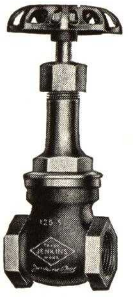
Has a gland packing box. Fitted with a malleable iron, non-heat handwheel.

Size In.	No. 370 Screwed		No. 371, Flanged		
	Each	End to End In.	Each	Face to Face In.	Diam Flange In.
¼	$2.40	1¾	.....	...	...
⅜	2.40	1¾	.....	...	...
½	2.60	1 15/16	.....	...	...
¾	3.30	2 5/16	$14.00	3⅜	3⅞
1	4.40	2 11/16	16.00	3 15/16	4¼
1¼	6.00	3	19.50	4½	4⅝
1½	8.00	3⅜	24.00	4⅞	5
2	11.00	4	37.50	5¾	6
2½	19.00	4 11/16	49.00	6½	7
3	28.00	5⅜	57.50	7⅜	7½

Jenkins Bronze Gate Valves

Inside Screw—Traveling Spindle—Solid Wedge

125 Pounds Steam Pressure at 500°F.
200 Pounds Non-Shock Cold Oil, Water, Gas Pressure


No. 47, Screwed

Double face solid wedge type valve. Can be repacked under full pressure when in open or closed position.

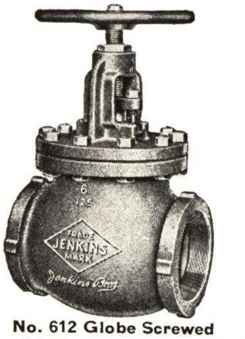
Size In.	No. 47, Screwed		No. 48, Flanged		
	Each	End to End Inches	Each	Face to Face Inches	Diam. Flg. In.
¼	$2.40	1¾	......	...	...
⅜	2.40	1¾	......	...	...
½	2.60	1 15/16	......	...	...
¾	3.30	2 5/16	$14.00	3⅜	3⅞
1	4.40	2 11/16	16.00	3 15/16	4¼
1¼	6.00	3	19.50	4½	4⅝
1½	8.00	3⅜	24.00	4⅞	5
2	11.00	4	37.50	5¾	6
2½	19.00	4 11/16	49.00	6½	7
3	28.00	5⅜	57.50	7⅜	7½

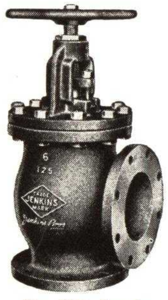
Jenkins Iron Body Globe and Angle Valves

Regrind—Renew—Regrinding Disc and Seat Ring

Outside Screw and Yoke

125 Pounds Steam Pressure at 450° F.
200 Pounds Non-Shock Cold Oil, Water, Gas Pressure


No. 612 Globe Screwed


No. 615, Angle Flanged

Sturdy through bonnet bolts cannot corrode or shear off. A high pressure asbestos gasket fits into a recess in body assuring perfect seal between body and bonnet. Center guide stem of disc fits perfectly into guide in seat ring assuring concentric seating.

Body, bonnet, and all ferrous parts are made of semi-steel gray iron with an average tensile strength of almost 34,000 pounds per square inch.

Size In.	Screwed			Flanged			
	No. 612 Globe No. 614 Angle Each	No. 612 End to End In.	No. 614 Center to End Inches	No. 613 Globe No. 615 Angle Each	No. 613 Face to Face In.	No. 615 Center to Face Inches	Diam. Flange Inches
2	$7.00	7	3½	$8.60	8	4	6
2½	9.00	8	4	10.75	8½	4¼	7
3	12.50	8¾	4⅜	15.00	9½	4¾	7½
3½	15.25	9⅜	...	18.50	10½	...	8½
4	19.00	10	5	22.50	11½	5¾	9
5	27.00	12	...	31.00	13	...	10
6	37.50	13⅜	6 11/16	42.00	14	7	11

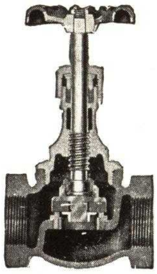
Jenkins Iron Body Globe and Angle Valves

Bronze Seat Ring and Composition Disc

Screwed Ends

150 Pounds Steam Pressure
250 Pounds Non-Shock Cold Oil, Water, Gas Pressure

No. 137, Globe Screwed



Sectional View

No. 139, Angle Screwed

Especially serviceable for the control of steam, fluids and gases where drop-tight closure is essential. Resilient composition disc assures tight closure with least closing effort and can be replaced quickly without removing valve from line.

	No. 137, Globe		No. 139, Angle	
Size In.	Each	End to End Inches	Each	Center to End Inches
½	$2.50	2⅞	$2.50	1 15/32
¾	3.40	3 9/16	3.40	1 13/16
1	4.25	4⅛	4.25	2 1/16
1¼	6.25	4¾	6.25	2 5/16
1½	8.35	5¼	8.35	2½
2	13.20	6½	13.20	3 7/16
2½	17.00	7¾	17.00	3⅞
3	25.00	9⅜	25.00	4 11/16

Jenkins Iron Body Y or Blow-Off Valves

Outside Screw and Yoke

Renewable Bronze Seat Ring—Composition Disc

250 Pounds Steam Pressure
500 Pounds Non-Shock Cold Oil, Water, Gas Pressure
A.S.M.E. Boiler Code—200 Pounds Steam Pressure at 388°F.

Regularly fitted with No. 119-A disc.

No. 336, Screwed

No. 336, Screwed

Size In.	Each	End to End In.
2	$30.00	9
2½	38.00	10 9/16
3	49.00	12

No. 337, Flanged

Size In.	Each	Face to Face In.	Diam. Flge. In.
2	$34.00	11¼	6½
2½	45.00	13	7½
3	60.00	14	8¼

Jenkins Bronze Y or Blow-Off Valves

Renewable Seat Ring—Composition Disc

Screwed: **150 Pounds Steam**
300 Pounds Non-Shock Cold Oil, Water, Gas
Flanged: **150 Pounds Steam**
225 Pounds Non-Shock Cold Oil, Water, Gas

Suited for blow-off services or where heavy fluids are handled. Because of angle, seat opening is practically in line with pipe.

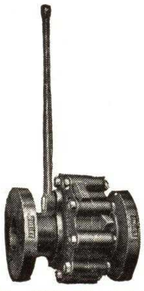
No. 124 Screwed

	No. 124 Screwed		No. 125 Flanged	
Size In.	Each	E.toE., In.	Each	F.toF., In.
⅜	$5.80	2⅜	......	....
½	6.40	3 1/16	$15.00	4¼
¾	8.50	4⅜	21.00	5½
1	11.00	5¼	27.00	6¼
1¼	14.00	5 15/16	33.00	7
1½	18.00	6⅝	40.00	7⅝
2	26.00	8⅛	60.00	9¼
2½	49.00	9½	83.00	10⅝
3	68.00	9¾	110.00	11

Model W Everlasting Regular Blow-Off Valves

For 250 Pounds Steam Working Pressure

No. 4000, Straight Lever Type, Screwed



No. 4001 Straight Lever Type Flanged

No. 4011, Rack and Pinion Type, Flanged

Valves 2½ inches and larger for pressures over 150 pounds should have rack and pinion operating gear.

No. 4000 Straight Lever Type

Screwed Ends

Size In.	‡Iron Body Each	Semi-Bronze Each	§Bronze Each	Cast Steel Each	End to End Inches	Ship. Wt. Lb.
⅜	$9.00	$9.50	$9.50	$9.50	2½	7½
½	9.00	9.50	10.00	10.00	2½	7½
¾	11.00	12.50	15.00	15.00	3	10½
1	11.00	12.50	15.00	15.00	3½	15
1¼	16.00	21.00	25.00	25.00	3⅜	18
1½	22.00	27.50	35.00	35.00	4¼	29
2	25.00	35.00	45.00	45.00	4⅜	34
*2½	32.00	50.00	65.00	65.00	5⅛	53
†3	44.00	68.00	86.00	86.00	6⅜	85

No. 4001 Straight Lever Type

Flanged Ends

Size In.	‡Iron Body Each	Semi-Bronze Each	§Bronze Each	Cast Steel Each	Face to Face Inches	Diam. Flanges Inches	Ship. Wt. Lb.
1	$15.00	$20.00	$25.00	$25.00	7¼	4⅞	22
1¼	19.00	28.00	35.50	35.50	7¼	5¼	27
1½	26.00	35.00	52.00	52.00	8⅛	6⅛	45
2	30.00	45.00	65.00	65.00	8⅞	6½	53
*2½	39.00	60.00	90.00	90.00	10¼	7½	84
†3	50.00	85.00	120.00	120.00	11⅞	8¼	114

No. 4010 Rack and Pinion Type

Screwed Ends

Size In.	‡Iron Body Each	Semi-Bronze Each	§Bronze Each	Cast Steel Each	End to End Inches	Ship. Wt. Lb.
1½	$31.00	$36.50	$44.00	$44.00	4¼	33
2	34.50	43.00	53.00	53.00	4⅜	39
2½	40.00	59.00	74.00	74.00	5⅛	66
*3	54.00	78.00	96.00	96.00	6⅜	93

No. 4011 Rack and Pinion Type

Flanged Ends

Size In.	‡Iron Body Each	Semi-Bronze Each	§Bronze Each	Cast Steel Each	Face to Face Inches	Diam. Flanges Inches	Ship. Wt. Lb.
1½	$35.00	$44.00	$61.00	$61.00	8⅛	6⅛	52
2	39.00	53.00	73.00	73.00	8⅞	6½	60
2½	48.00	69.00	99.00	99.00	10¼	7½	96
*3	60.00	95.00	130.00	130.00	11⅞	8¼	130

Flanged valves have 1/16-inch raised faces.

Flanged valves drilled current standard without charge.

Prices on larger sizes upon application.

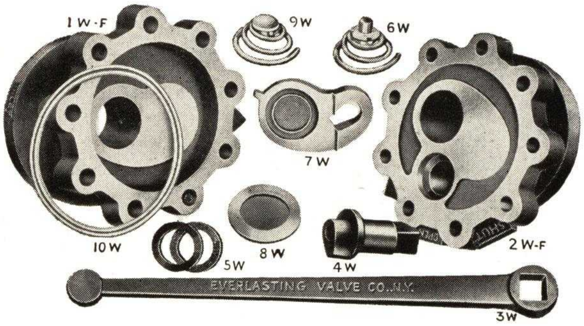
Angle valves can also be furnished.

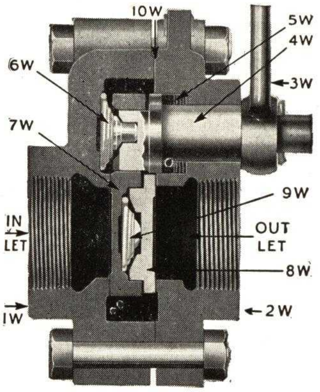
Resistance to operation limits: *To 150 pounds actual working pressure; †to 80 pounds actual working pressure.

‡Prices also cover acid iron valves.

§Prices also cover acid resisting bronze valves.

Repairs and Assemblies for Model W Regular Everlasting Valves





Parts for Straight Lever Type

No.	Description	Each
1W	Top Bonnet Screw End	.....
1WF	Top Bonnet Flanged	.....
2W	Bottom Bonnet Screw End	.....
2WF	Bottom Bonnet, Flanged	.....
3W	Wrench	.....
4W	Post	.....
5W	Post Gaskets	.....
6W	Post Spring	.....
7W	Lever Arm	.....
8W	Disc	.....
9W	Disc Spring	.....
10W	Body Gasket	.....

Additional Parts for Rack and Pinion Type

30W	Bottom Bonnet Rack and Pinion Type Screw End	.....
30WF	Bottom Bonnet Rack and Pinion Type, Flanged	.....
31W	Pinion Wrench	.....
32W	Pinion Pin and Nut	.....
33W	Gear Segment and Set Screw	.....

Repair Sets

Customary repairs require only a few new parts which should be renewed as complete sets and are so packed in convenient boxes. Instructions included in each box.

Set A—For Iron Body Valves

For casual repairs. Consists of Nos. 5W, 6W, 9W and 10W.

Size.......inches	½	¾	1	1¼	1½	2	2½	3
Set A.....per set	$2.50	2.50	2.70	2.70	2.90	3.10	3.30	8.90

Set B—For Iron Body Valves

Used when new disc is needed. Consists of Nos. 5W, 6W, 7W, 8W, 9W and 10W.

Size.....inches	½	¾	1	1¼	1½	2	2½	3
Set B....per set	$3.80	4.10	4.30	5.30	6.00	6.40	7.70	15.70

Walworth Iron Body Screwed Foot Valves

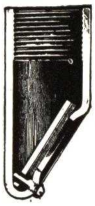
With Strainer and Leather Faced Disc

Style ¾ to 6-Inch

Size In.	No. 2245 Black Each	No. 2246 Galv. Each	Total Height Inches	Largest O.D. Inches
¾	$1.15	$1.75	3⅝	3¾
1	1.30	2.00	3⅝	3¾
1¼	1.40	2.10	4¼	4¼
1½	1.90	2.85	4¾	4¾
2	2.40	3.60	5⅝	5½
2½	3.30	5.00	6⅛	6⅞
3	3.90	5.75	7⅜	8¼
3½	5.60	8.50	9⅛	8⅜
4	7.30	11.00	9⅞	9⅝
5	11.25	16.75	10⅝	10½
6	14.75	22.00	11⅝	12½
8	41.00	62.00	12⅝	15¼
10	64.00	110.00	19⅝	19½
12	100.00	155.00	19⅞	20¼

No. 300 Clearflow Foot Valves

All Brass



This all brass foot valve is seamless and non-corrosive. It has small outside diameter and unrestricted flow—equal to that through open suction pipe.

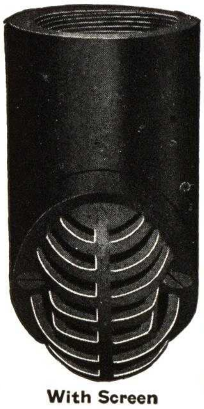
Quick closing—only 20 degrees valve travel, non-slamming on inclined seat.

The valve is self-cleaning; vulcanized rubber facing is unaffected by sand or grit.

Long wearing; the non-fouling metal hinge lasts the life of a pump.

Standard Pipe Size..............inches	¾	1	1¼
No. 300..............................each	$1.25	1.50	1.75
Outside Diameter..............inches	1 3/16	1⅜	1¾
Approximate Weight............ounces	4	6	9

Clearflow Iron Foot Valves

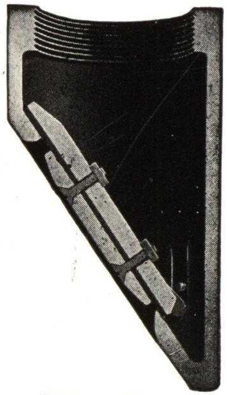

With Screen

A quick-closing silent valve. Has small o.d.

Unrestricted flow is equal to that through open suction pipe. Valve is water-tight even at low pressure.

Self-cleaning and sand-proof due to inclined seat and patented hinge.

Body is cast iron.

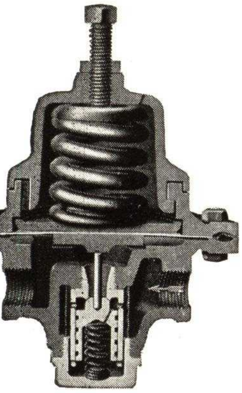

Without Screen

Std. Pipe Size In.	O.D. Casing In.	O.D. In.	With Screen Black Each	With Screen Galv. Each	With Screen Approx. Wt. Lb.	Without Screen Black Each	Without Screen Galv. Each	Without Screen Approx. Wt. Lb.
1¼	....	2⅜	*$2.25	*$2.50	2	$1.75	$2.00	1¾
1½	....	2½	* 2.25	* 2.50	2	1.75	2.00	1¾
2	....	3⅛	* 3.75	* 4.25	4½	3.00	3.50	3½
2½	....	3¾	† 6.00	† 7.00	7¼	4.00	5.00	6
2½	3	4⅜	† 8.00	† 9.00	10½	6.00	6.75	9
3	3½	4⅞	† 9.50	†10.75	13	8.00	9.50	11½
3½	4	5⅝	†13.00	†15.00	18	10.00	11.75	15½
4	5	6½	†15.50	†18.00	24	13.00	15.00	20
5	6	7½	†21.25	†24.75	36	18.00	21.00	31
6	7	8⅝	†28.00	†33.00	52	24.00	29.00	46
7	8	9⅝	†38.00	†45.00	70	32.00	38.00	60
8	9	10¾	†48.00	†58.00	96	40.00	48.00	78
....	10	11⅛	†54.00	†61.00	100	45.00	51.00	80
10	....	12	†85.00	†96.00	150	70.00	81.50	115

*Equipped with stamped brass screen.

†Equipped with cast steel or cast brass screen.

No. 13 Davis Automatic Pressure Reducing Valves



For universal use on steam, air and gas pipe lines. Good for initial pressures up to 250 pounds and any reduced pressure between 100 and 1 pound as specified.

The Davis No. 13 Valve affords the means by which automatic pressure reductions may be done simply, efficiently and economically. It will maintain the desired pressure reduction when functioning anywhere from 100 per cent capacity to no flow at all.

When it is closed, the flow is entirely stopped; there is no leaking.

Spring capacities range as follows: No. 1 spring, 1 to 20 pounds, reduced pressure; No. 2 spring, 20 to 50 pounds; No. 3 spring, 50 to 100 pounds.

Some features of this valve are: Single seat; spring loaded; self-contained; built-in strainer; tight closing disc; high pressure beneath the disc; laminated phosphor bronze diaphragm; spring cap removable by hand; all parts renewable without disturbing pipe connections.

Size Inches	Semi-Steel Body Bronze Trim Each	Bronze Body Bronze Trim Each	Shipping Weight Pounds
3/8	**$24.00**	**$32.00**	13
1/2	**24.00**	**32.00**	14
3/4	**26.00**	**38.00**	18
1	**32.00**	**46.00**	21
1 1/4	**42.00**	**60.00**	23
1 1/2	**52.00**	**80.00**	56
2	**64.00**	**104.00**	60

No. 21S Davis Regulators

For Water, Air and Gas

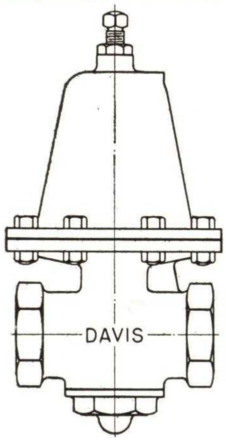
Pressures, Pounds per Square Inch:

Max. Initial, 150—Max. Reduced, 50—Min. Reduced, 5

Though widely used for water pressure reduction this regulator is equally adapted to reducing pressures of other liquids, air and gas.

Valve sizes ½ to 2-inches inclusive have bronze bodies, larger valves have iron bodies with bronze trim. A composition disc insures tight closure of this single seated valve and a generously proportioned fabric inserted rubber diaphragm provides sensitive regulation. A piston balances the effect of the initial pressure on the disc and a variation in the initial pressure is therefore not reflected in the reduced pressure. Port area is full pipe area.

The valve is held open by the spring. A small port connects the diaphragm chamber with the outlet side of the valve. When the reduced pressure builds up under the diaphragm the effect of the spring is overcome and the valve is closed by compressing the spring. The set-screw on top of valve provides adjustment for increasing or decreasing the spring tension thereby changing the reduced pressure.



Size In.	Screwed Each	Flanged 125 Lb. Std. Each	Ship. Weight Pounds
1/2	**$40.00**	......	18
3/4	**40.00**	......	18
1	**45.00**	......	20
1 1/4	**45.00**	......	20
1 1/2	**55.00**	**$65.00**	25
2	**75.00**	**85.00**	35
2 1/2	**105.00**	**110.00**	110
3	**130.00**	**135.00**	125
4	......	**185.00**	150

Fisher Small Volume Reducing Valves

With or Without Combination Relief Valve

A small volume, compact, self-contained pressure reducing valve principally intended for air or gas service to control a varying inlet pressure and deliver a constant reduced pressure.

Especially suitable for controlling the air supply to pilot operated regulators and instruments.

No. 77R valve is a combination pressure reducing and pressure relief valve. The relief valve feature will normally relieve at 5 pounds higher than reduced pressure setting.

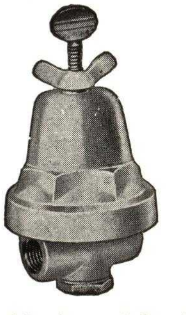
No. 77T is same as No. 77R, with the exception that the relief valve feature is not included, it being simply a straight pressure reducing valve. The regulator body has ¼-inch screwed connections, one inlet connection and two outlet connections. Fitted with composition diaphragm and valve disc.

Normally intended for non-corrosive air or gas, having a rated capacity of approximately 3 cubic feet per minute at 100 pounds initial pressure, 5 pounds reduced pressure. Regulators with die cast bodies are intended for a maximum initial pressure up to 250 pounds, 150°F.; bronze body regulators are suitable for 400 pounds initial pressure, 150°F. Either type of regulator is normally furnished for two standard reduced pressure ranges: 3 to 20 or 15 to 40 pounds.

	Zinc Base Die Cast Body	Bronze Body
No. 77R, with Relief Valve............each	**$4.50**	**$12.25**
No. 77T, without Relief Valve.........each	**4.25**	**12.00**

Type A-31 Cash Acme Pressure Reducing and Regulating Valves

For Water, Air and Oil Service



Especially adapted for use on beer pumps, bubblers, gas refrigerators, paint spray equipment, water or air lines, etc.

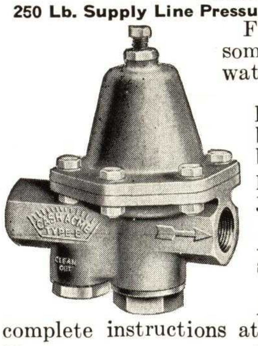
Single seat, readily renewable, steel spring, composition seat disk, body and spring chamber of bronze forgings. Available with wing type adjusting screw or with standard fillister head screw and lock nut. Furnished with oil resistant diaphragms and seats at same price.

Suitable for any initial water pressure up to 300 pounds or air pressure up to 150 pounds. Reduced pressure range on either service, 2 to 100 pounds. Pipe sizes, ⅛, ¼ or ⅜-inch. Approximate shipping weight, 1 pound.

No. **A-31**......................................each **$4.00**

Type E Cash-Acme All Bronze Water Regulators

250 Lb. Supply Line Pressures—10 to 150 Lb. Delivery Pressures



For water service; may be used on some industrial applications on either water or air. Not designed for steam.

Large inbuilt strainer made from heavy perforated, non-collapsible brass. Renewable nickel-chrome bronze seat closes against a composition, renewable seat disc. Black japanned, oil tempered steel spring.

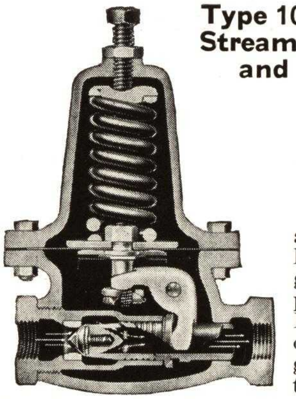
Delivery pressure set at 45 lbs. Adjustment may be changed by screwing adjusting screw.

Standard factory setting 45 lbs. Adjustment can be made on job, complete instructions attached to valve.

Size....................inches	1/2	3/4	1
Type E....................each	**$8.90**	**11.50**	**18.90**

Type 1000-HP Cash Standard Streamlined Pressure Reducing and Regulating Valves

Normal Size Diaphragm



Delivery Pressures:
1¼x1¼, 1¼x1½ Inch—25 to 150 Lb.
1½x1½, 1½x2 Inch—25 to 125 Lb.
2x2, 2x2½ Inch—25 to 100 Lb.
Other Sizes—25 to 200 Lb.

Reduces a higher pressure to a lower pressure and, holds the lower pressure constant, regardless of variations in initial pressure, or changes in demand. For use with steam, water, air, oils, many chemicals, most gases—practically everything that flows. Stainless steel, or bronze, or Nitralloy seat and ring.

Size Inches	Iron Body Bronze Trim Each	Iron Body *Bronze Trim Each	Iron Body Stainless Steel Trim Each	Bronze Body Bronze Trim Each	Bronze Body *Bronze Trim Each	Bronze Body Stainless Steel Trim Each	Steel Body Bronze Trim Each	Steel Body Steel Trim Each	Steel Body Stainless Steel Trim Each
¼x¼ ¼x⅜	$38.00	$36.00	$66.00	$47.00	$45.00	$75.00	$65.00	$86.00	$92.00
⅜x⅜ ⅜x½	38.00	36.00	66.00	47.00	45.00	75.00	65.00	86.00	92.00
½x½ ½x¾	42.00	40.00	75.00	55.00	53.00	88.00	75.00	100.00	107.00
¾x¾ ¾x1	48.00	46.00	92.00	63.00	61.00	107.00	86.00	121.00	130.00
1 x1 1 x1¼	59.00	56.00	119.00	79.00	76.00	139.00	102.00	152.00	162.00
1¼x1¼ 1¼x1½	80.00	77.00	174.00	107.00	104.00	200.00	124.00	207.00	218.00
1½x1½ 1½x2	103.00	100.00	202.00	132.00	129.00	231.00	154.00	240.00	253.00
2x2 2 x2½	134.00	130.00	250.00	165.00	161.00	282.00	194.00	296.00	310.00

*With composition seat and bronze seat ring.

Class D Cash Standard Pressure Reducing and Regulating Valves

Single Seat—For Practically All Fluids

A.W. CASH CO.
DECATUR ILL

Screwed

Will automatically reduce a higher pressure to a lower pressure, and maintain that lower pressure constant. Has cartridge type renewal unit.

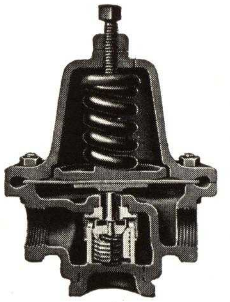
Iron body valves; highest initial pressure 200 pounds; highest delivery, 125 pounds; bronze unit good for 450° F., monel or nitralloy 500° F. Bronze body: highest initial pressure 250 pounds; highest delivery 200 pounds; highest temperature 450°F. Steel body: highest initial pressure 250 pounds; highest delivery 200 pounds monel unit good for 600° F., nitralloy 750° F.

Screwed

Size In.	Iron Body Bronze Trim Each	Iron Body Nitralloy Trim Each	Iron Body Stainless Steel or Monel Trim, Each	Bronze Body Bronze Trim Each	Bronze Body Nitralloy Trim Each	Bronze Body Stainless Steel or Monel Trim, Each	Steel Body Nitralloy Trim Each	Steel Body Stainless Steel or Monel Trim, Each
¼	$15.00	$19.00	$25.00	$21.00	$25.00	$31.00	$35.00	$42.00
⅜	16.00	20.00	26.00	22.00	27.00	33.00	35.00	42.00
½	17.00	21.00	28.00	25.00	30.00	36.00	38.00	44.00
¾	19.00	24.00	31.00	31.00	36.00	43.00	43.00	50.00
1	23.00	30.00	40.00	37.00	44.00	54.00	50.00	59.00
1¼	29.00	37.00	49.00	45.00	53.00	65.00	58.00	71.00
1½	36.00	45.00	59.00	54.00	63.00	77.00	69.00	84.00
2	46.00	56.00	73.00	65.00	75.00	91.00	84.00	100.00
Flanged								
Standard								
1½	$50.00	$60.00	$74.00	$72.00	$82.00	$96.00	$88.00	$102.00
2	64.00	78.00	94.00	88.00	100.00	116.00	102.00	120.00
Extra Heavy								
1½	$54.00	$64.00	$78.00	$78.00	$88.00	$112.00	$94.00	$108.00
2	68.00	82.00	98.00	94.00	106.00	122.00	108.00	126.00

Class Y Cash Standard Pressure Regulators

Screwed Ends



Water Service: Highest initial pressure 300 pounds highest reduced pressure, 125 pounds.

Air Service (with oilproof rubber diaphragm): highest initial pressure, 250 pounds; highest reduced pressure, 125 pounds.

Automatically reduces a higher pressure to a lower pressure, and holds the reduced pressure constant. For water, air, and other fluids.

Iron body, hot galvanized; bronze trim; composition seat.

Size............inches	¼	⅜	½	¾	1
Class Y..........each	$10.50	10.50	10.50	11.50	16.50

No. 61 Watts Pressure Regulators

A small regulator for water and air lines.

Suited for dispensing purposes and individual drinking fountains. Extruded bronze with rubber diaphragm.

Initial pressures up to 200 pounds.

Reduced pressure range, 1 to 100 pounds.

Stock setting to reduce 100–15 pounds furnished unless otherwise specified.

Size, ¼ inch. Height, 2¼ inches. Diameter, 1⅝ inches. Weight, ½ pound.

No. **61**......................................each **$2.52**

For valves for oil service, add 20 cents.

Watts Pressure Regulators

A dependable regulator for water and air. For air-conditioning, drinking fountains, paint spraying, etc.

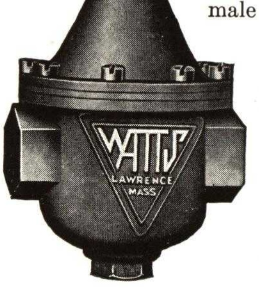
For initial pressures up to 300 pounds.

No. 26AC. Forged bronze with sensitive rubber diaphragm. Reduced pressure range, 1 to 90 pounds. Stock setting, to reduce 100 to 15 pounds.

No. 26. Same general construction as No. 26AC, but with monel metal diaphragm and different spring for higher pressures. Reduced pressures, 25 to 175 pounds. Stock setting, to reduce 100 to 45 pounds.

	No. 26AC		No. 26	
Size...............inches	⅛–¼	⅜	⅛–¼	⅜
Each....................	**$3.84**	**4.80**	**4.44**	**5.40**
Height............inches	4	4¼	4	4¼
Diameter..........inches	2½	2½	2½	2½
Weight...........pounds	1⅛	1¼	1⅛	1¼

No. 123 Watts Pressure Regulators



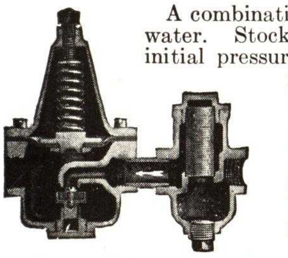
For water or air. Stock setting to reduce 100 to 45 pounds. Adjustable to a wide range of reduced pressures.

Female connections except ½-inch size which has I.P.S. female inlet and male outlet. Built of extra heavy bronze castings.

Diaphragm of specially treated, reinforced gum rubber is quickly responsive to slight pressure changes. Medium hard disc closes against well rounded seat.

Size In.	Each	Lgth. In.	Wt. Lb.	Size In.	Each	Lgth. In.	Wt. Lb.
½	$8.40	3	2⅛	1½	$37.80	6	12
¾	11.55	3½	3⅝	2	42.25	6½	17
1	14.70	4	5	2½	63.00	8⅛	24
1¼	21.00	4½	6¼	...	.....	...	...

No. 123S Watts Pressure Regulators and Strainers



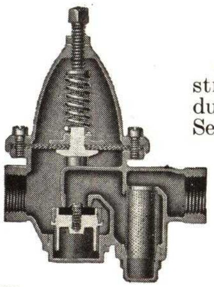
A combination regulator and strainer. For water. Stock setting to reduce 100 pounds initial pressure to 45 pounds. Valves furnished with stock settings unless otherwise specified.

The strainer protects the valve seat and disc against damage from rust and other foreign matter. Made of heavy bronze castings with stout perforated brass screen.

I.P.S. female inlet and male outlet on ½-inch size, all others have female connections.

Size........in.	½	¾	1	1¼	1½	2	2½
No. 123S...ea.	**$14.40**	**19.20**	**26.40**	**38.40**	**60.00**	**80.40**	**105.60**
End to End.in.	6½	7	8	9¼	11¼	13¾	15½
Weight.....lb.	3	5	8	10	17	25	36

No. 135 Watts Pressure Regulators and Strainers



An all-bronze one-piece regulator and strainer for household service and industrial applications on water or air. Sensitive rubber diaphragm insures quick response to load demands. Heavy construction. For initial pressures up to 250 pounds. Valves set to reduce 100 pounds initial pressure to 45 pounds, with an adjustment range of 5 to 100 pounds reduced pressure, unless otherwise ordered.

Size..........................inches	½	¾	1
No. 135......................each	**$10.50**	**13.65**	**19.95**
Length.......................inches	5	5½	6
Height.......................inches	6½	7	7½
Weight.....................pounds	4	5	7

Valves outside listed ranges, and for oil service, add 15 per cent.

Cash Acme Diaphragm Type Pressure Relief Valves

For Hot or Cold Water and Air

CASH ACME
DECATUR ILL.

Type FH

Type FH for hot or cold water and air. Bronze body, forged bronze spring chamber; laminated bronze diaphragm; nonsticking seat; renewable seat disc; unobstructed discharge, full pipe size; male inlet, female outlet. Any pressure setting up to 175 pounds, except on 1-inch size, which will take setting up to 125 pounds.

Size..........inches	½	¾	1
Each................	**$3.80**	**6.40**	**16.85**

Type FH-L same as Type FH except with try-lever for manual testing. Lever works through sealcap.

Size..........inches	½	¾	1
Each................	**$4.20**	**7.00**	**18.00**

B & G High Pressure Relief Valves

*Pressure Range, 40 to 150 Pounds

Designed to give protection against excess pressure in service or domestic water systems.

Diaphragm operated, with all working parts made of brass.

Body in either brass or iron.

	Brass		Iron	
No........	4	5	9	10
Each......	**$7.54**	**9.12**	**5.54**	**7.13**
Size....in.	½	¾	½	¾
Approx. Ship. Wt...lb.	2½	2¾	2¾	3

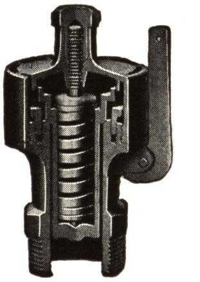
*Standard setting 75 pounds. For other setting specify when ordering.

No. 1 Kunkle Lock-Up Bronze Pop Safety Valves

For Portable and Stationary Boilers

For Steam Pressures Not Exceeding 250 Pounds

Has direct outlet for escape of steam. With male or female inlet, to connect with standard steam pipe tap. Furnished flanged at additional cost. Sizes to and including 3 inches meet requirements of A.S.M.E. Boiler Code and various state boiler laws. Boiler pressure at which valve is to be set must be stated.



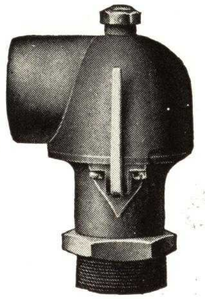
Size In.	Each	Size In.	Each
½	**$8.00**	**3**	**$50.00**
¾	**8.00**	**3½**	**70.00**
1	**10.00**	**4**	**90.00**
1¼	**12.00**	**4½**	**110.00**
1½	**15.00**	**5**	**140.00**
2	**23.00**	**6**	**180.00**
2½	**35.00**	...	......

Can also be made for air pressure.

No. 2 Kunkle Bronze Side Outlet Lock-Up Safety Valves

For Steam Pressure Not Exceeding 250 Pounds

Designed for use on portable and stationary boilers and on equipment where it is desired to conduct the discharged steam away from the boiler.



The valve is made with male or female inlet. Valves of this pattern in sizes up to and including 3 inches meet the requirements of the A. S. M. E. boiler code and state boiler laws of various states.

Size In.	Ht. In.	Price Each	Size In.	Ht. In.	Price Each
⅜, ½, ¾	3½	**$10.00**	**3**	9	**$56.00**
1	4¾	**12.00**	**3½**	10¼	**78.00**
1¼	5¼	**14.00**	**4**	11¾	**100.00**
1½	5½	**17.00**	**4½**	13	**125.00**
2	6¼	**27.00**	**5**	14¼	**160.00**
2½	8	**40.00**	**6**	17½	**200.00**

No. 9 Kunkle High Pressure Bronze Relief Valves

For Pressures Not Exceeding 500 Pounds

This valve is designed to relieve any liquid (not injurious to bronze) where a positive and automatic relief is required. Furnished with male or female inlet to connect with standard pipe thread connections; outlet is same size as inlet.

When ordering, state finish; also size of pipe connection and pressure at which valve is to be set.

Size In.	Semi-Finished Each	Polished Each	Size In.	Semi-Finished Each	Polished Each
½	**$8.00**	**$9.00**	**1½**	**$15.00**	**$16.50**
¾	**8.00**	**9.00**	**2**	**25.00**	**27.00**
1	**10.00**	**11.00**	**2½**	**35.00**	**37.00**
1¼	**12.00**	**13.00**	**3**	**50.00**	**52.50**

We Carry

A REPRESENTATIVE STOCK

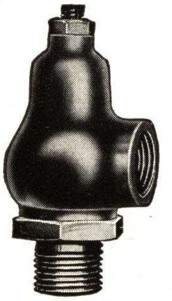
of Goods Listed in This Catalog

In some instances, we present information and listings of sizes and varieties not in stock but readily available.

YOUR ORDERS ARE INVITED for everything listed—and anything akin to these goods needed in your business.

No. 11 Kunkle Brass Low Pressure Relief Valves

For Pressures Up To 100 Pounds



Designed to meet the demand for a low priced, reliable relief valve. It has full relieving capacity and is precise and automatic in operation.

Used widely on oil and water pumps, lines, and systems where working pressures are less than 100 pounds.

Furnished standard with male inlet and female thread outlet.

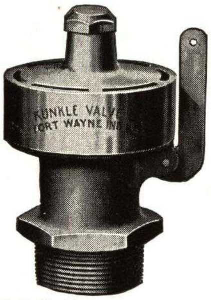
When ordering state pressure, up to 100 pounds, at which valve is to be set.

Inlet I.P.S. (Male)...............inches	⅜	½	¾
No. 11...............................each	**$3.00**	**3.00**	**3.50**
Outlet (Female)...................inches	½	½	¾

No. 12 Kunkle Bronze Safety Valves

For Pressures Not Exceeding 100 Pounds

A.S.M.E. Standard



A compact top outlet steam safety valve designed for small power boilers, pressure cookers, vulcanizers, sterilizers, etc.

Furnished with male pipe thread inlet.

Semi-finished, but can be supplied polished or nickel or chrome plated at additional cost.

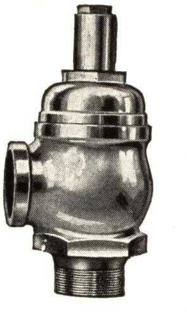
When ordering, state size of inlet (I.P.S.) and pressure at which valve is to be set.

I.P.S. Inlet............inches	⅜	½	¾	1
No. 12..................each	**$7.00**	**7.00**	**7.00**	**8.00**

No. 22 Kunkle Bronze Gas-Pop Relief Valves

For Pressure Not Exceeding 700 Pounds

For use with air or any gas not injurious to bronze.



Pop valve seat has large relieving capacity; blow down ring regulates opening and closing action. Outlet in base casting makes it possible to clean and repair valve without disturbing pipe connections.

When ordering, state number, size of pipe thread connections and pressure at which valve is to be set.

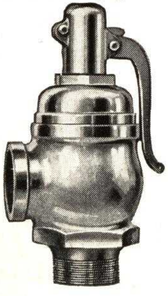
Size In.	Semi-Fin. Each	Pol. Fin. Each	Size In.	Semi-Fin. Each	Pol. Fin. Each
½	**$10.00**	**$11.00**	1½	**$18.00**	**$19.00**
¾	**10.00**	**11.00**	2	**27.00**	**29.00**
1	**12.00**	**13.00**	2½	**43.00**	**46.00**
1¼	**15.00**	**16.00**	3	**72.00**	**77.00**

No. 23 Kunkle All Bronze Pop Safety Valves

For Pressures Not Exceeding 350 Pounds

A.S.M.E. Standard

Designed for air service and for high pressure service on portable and stationary boilers. By removing the bonnet, all working parts can be removed without disturbing inlet or outlet pipe connections.



The blow-down ring is adjusted from the outside and the powerful compound lever can be turned to any position.

Semi-finished.

I.P.S. Inlet In.	Each	I.P.S. Inlet In.	Each
½	**$10.00**	1½	**$18.00**
¾	**10.00**	2	**27.00**
1	**12.00**	2½	**43.00**
1¼	**15.00**	3	**72.00**

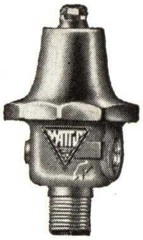
With female inlet, no extra cost.

Available with standard flanges, at extra cost, and in sizes to 4 inches.

No. 30 Watts Pressure Relief Valves

Listed by Underwriters' Laboratories

Regular Diaphragm Type

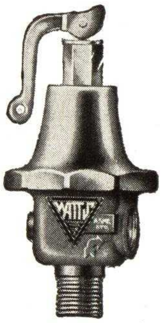


No. 30A

All bronze relief valve with flexible monel metal diaphragm.

The valve automatically relieves in case of excess pressure and reseats when conditions are restored to normal.

Used extensively to protect storage tanks against excessive pressure.



No. 30L
A.S.M.E. Std.

Weight of ½-inch size, 1¼ pounds; ¾-inch, 2¼ pounds.

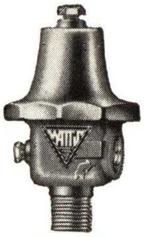
No.	½-Inch Each	¾-Inch Each	Description	Pressure Range Pounds	Standard Setting Pounds
30A	**$4.20**	**$6.83**	Adjustable	50–150	125
30A	**4.20**	**6.83**	Adjustable	5–75	75
30L	**4.73**	**7.35**	Adjustable Lever	50–150	125
30L	**4.73**	**7.35**	Adjustable Lever	5–75	75

For house heating systems: No. 30L adjustable lever, 5–30 pounds pressure, standard setting 25–30 pounds.

No. 31 Watts Diaphragm Pressure and Temperature Relief Valves

With Fusible Plug

Standard Setting, 125 Pounds



No. 31A

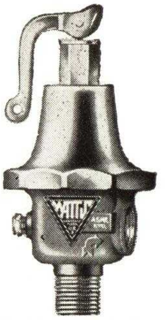
Used for protection against excessive pressures and temperatures.

The temperature relief is obtained through the melting of the fusible plug.

For domestic hot water supply tanks, and other systems requiring pressure and temperature protection.

Size, ½ in. Standard setting, 125 lb. Temperature, 212°.

Two extra fusible plugs are furnished with each valve.



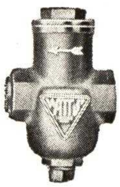
No. 31L, ASME Std.

No. 31A, Adjustable, 50–150 Lb.................each	**$6.00**
No. 31L, With Lever...............................each	**6.60**

Extra Plugs

No. 31A4-5, Including Holder..................each	**.32**

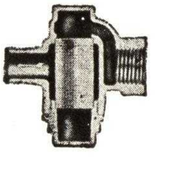
No. 34 Watts All Bronze Strainers



For water or air lines. Has large settling chamber, clean-out plug, and heavy perforated brass screen removable for cleaning. I.P.S. female inlet and outlet.

Size......in.	½	¾	1	1¼	1½	2	2½
No. 34..each	**$4.20**	**5.25**	**8.40**	**12.60**	**14.70**	**23.30**	**29.40**
Wt.......lb.	1½	2	2¾	4	4½	8	11

No. 37 Watts Strainers



An all-bronze strainer for water and air. Has heavy perforated brass screen.

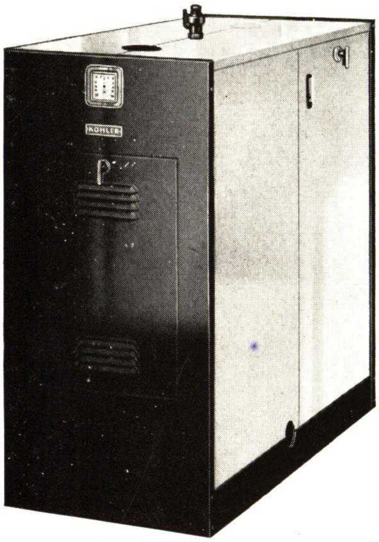
The ½-inch size has I.P.S. female inlet and male outlet. All other sizes have I.P.S. female inlet and outlet.

Size..........in.	⅛	¼	⅜	½
No. 37......each	**$2.10**	**2.10**	**2.10**	**2.10**
Weight.......lb.	⅞	⅞	⅞	⅞

Series 22 Cast Iron Oil Boilers

For Gun-Type Burners

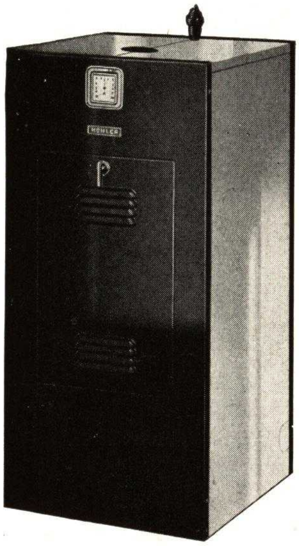
With Economizer Baffle



Series 22 Oil Boiler with Extended Jacket

Designed for gun-type oil burners, this boiler incorporates the important "wet-base" principle in its completely water-surrounded combustion chamber. No radiant heat is lost through base sides and floor.

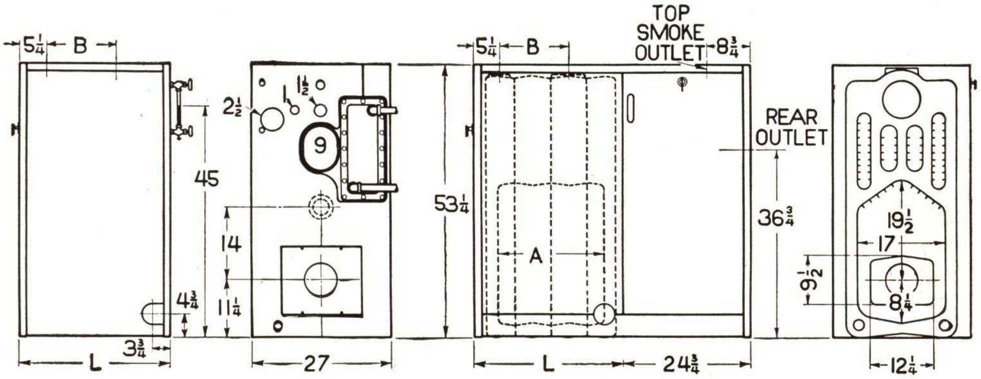
Multiple finned surfaces have been cast into the flues to obtain maximum heat absorption. Large upper nipples promote internal circulation between the sections. Slender vertical water passages between the flues further promote rapid internal circulation and assure quick response to the burner flame. Year-round hot water is provided by a domestic hot water heater built into the back section. Large firebox has an abundance of heating surface directly exposed to the burner flame. Multiple heat-extracting finned surfaces are cast into the top of the firebox. The boiler is covered with a thick blanket of heat-and-sound-insulating rock wool. Flues are accessible for cleaning through twin doors at the front. Fire door has a shielded Pyrex peephole for observation of flame. Provision has been made for a flange mounting of oil burner on the back of the boiler. Tappings for necessary control equipment are provided on the back section. Controls are easily accessible for adjustment. A rear extended jacket to house the oil burner and controls is available. A pre-cast refractory combustion chamber designed specifically for the various sizes of oil boilers is also available on order.

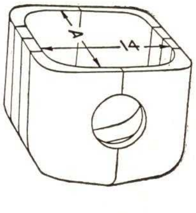


Series 22 Oil Boiler with Flush Jacket

No.	Net I-B-R Rating Steam Sq. Ft.	Water Sq. Ft.	BTU.	Gross I-B-R Output BTU.	Chimney Size Inches	Height Feet	Heat Surface Sq. Ft.	I-B-R Burner Capacity Gallons
22–6	400	640	96,000	146,000	8x8	30	29.5	1.45
22–7	490	785	118,000	178,000	8x8	30	36.9	1.75
22–8	580	930	139,000	209,000	8x8	30	42.8	2.00
22–9	670	1070	161,000	240,000	8x12	35	50.2	2.30
22–10	760	1215	182,000	271,000	8x12	35	56.1	2.55

Dimensions and Section Assemblage





Combustion Chamber

No.	Dimen. A Inches	Recommended for Boiler No.
4	10½	22–6
6	14	22–7 & 22–8
8	17½	22–9 & 22–10

No.	Dimensions, Inches A	B	L	Inlets No.	Size Inches	*Outlets No.	Size Inches	Assemblage
22–6	13½	6⅜	22	2	3	1 Each	2½ & 4	FT-T-B
22–7	17	9⅞	25½	2	3	1 Each	2½ & 4	FT-H-T-B
22–8	20½	13⅜	29	2	3	1 Each	2½ & 4	FT-M-T-B
22–9	24	16⅞	32½	2	3	1 Each	2½ & 4	FT-M-H-T-B
22–10	27½	13⅜	36	2	3	1 Each	2½ & 4	FT-M-T-M-B

Key to Sections

FT	Front Tapped 2½″
H	3½″ Middle
M	7″ Middle
T	7″ Middle Tapped 4″
B	Back Section

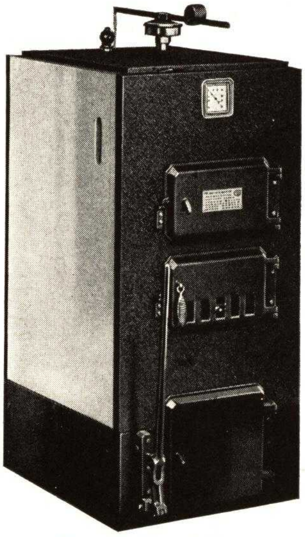
*Use 4-inch outlet for steam or gravity hot water; use 2½-inch outlet for forced hot water.

Auxiliary Tappings: Back section is tapped for aquastat, pressurestat, 2½-inch low water control, and for Minneapolis-Honeywell Protecto-relay. The burner port is equipped for flange mounting of burner if desired

Built-in Water Heaters: A 40-gallon built-in water heater is regularly furnished as standard equipment. Other sizes available are: 100-gallon storage type; 180 or 210-gallon tankless type. Tankless heaters are applicable to hot water systems only when the boiler is constantly maintained at 180°. In areas where hard water prevails, a tankless heater is not recommended.

Trimmings: Include flue brush and shielded Pyrex peephole; on steam boilers, a water gauge, recessed combination pressure-vacuum gauge and safety valve; on water boilers, a recessed combination altitude gauge and thermometer.

Series G Cast Iron Heating Boilers

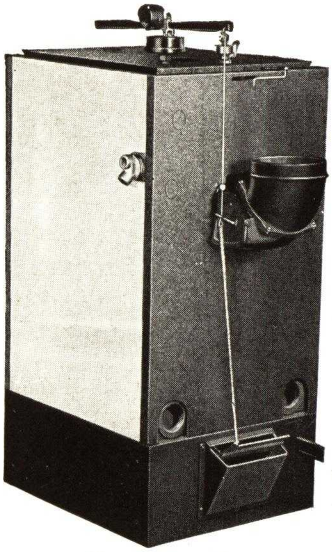


Type G, Front View

Designed for the efficient combustion of all types of fuels.

Large upper nipples provide internal circulation between sections. Scientific heat-trapping flue design, large and effective heating surfaces, and efficient heat-retaining insulation enclosing the entire boiler, all contribute to the remarkable operating economy of this boiler.

A built-in heater, located at the water line of steam boilers, provides domestic hot water at low cost. A foot controlled ash-pit door opener is an unusual convenience. A large firebox with ample fuel capacity permits long firing periods. Recessed gauges, concealed damper control, and the heavy gage baked enamel finish contribute to the modern, handsome appearance of Kohler G boilers.

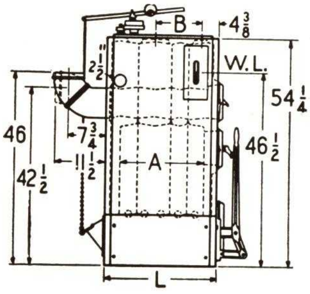


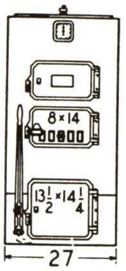
Type G, Rear View

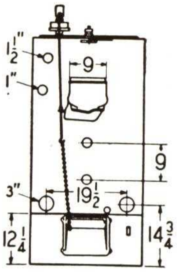
Type G Boilers for Hand Firing

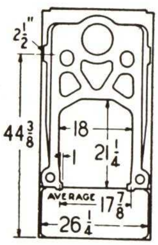
No.	Net I-B-R Rating Steam Sq. Ft.	Net I-B-R Rating Water Sq. Ft.	Net I-B-R Rating BTU.	Gross I-B-R Output BTU.	Grate Area Sq. Ft.	Fuel Capacity Lb.	Chimney Size Inches	Chimney Height Feet
G-20	300	480	72,000	167,000	2.22	184	8x8	30
G-24	390	625	94,000	213,000	2.77	222	8x8	35
G-28	480	770	115,000	257,000	3.32	260	8x12	35
G-32	570	910	137,000	300,000	3.87	288	8x12	35
G-36	660	1055	158,000	342,000	4.42	336	12x12	35
G-40	750	1200	180,000	381,000	4.97	374	12x12	40

Dimensions and Section Assemblage









No.	Dimensions, Inches A	Dimensions, Inches B	Dimensions, Inches L	*Outlets No.	*Outlets Size Inches	*Outlets No.	*Outlets Size Inches	Inlets No.	Inlets Size Inches	Assemblage
G-20	16⅛	6⅝	23	1	2½	1	4	2	3	FT-MT-B
G-24	20⅛	10⅝	27	1	2½	1	4	2	3	FT-H-MT-B
G-28	24⅛	14⅝	31	1	2½	1	4	2	3	FT-M-MT-B
G-32	28⅛	18⅝	35	1	2½	1	4	2	3	FT-M-H-MT-B
G-36	32⅛	14⅝	39	1	2½	1	4	2	3	FT-M-MT-M-B
G-40	36⅛	18⅝	43	1	2½	1	4	2	3	FT-M-H-MT-M-B

Key to Sections

FT	Front Tapped 2½"
M	8" Middle
MT	8" Middle Tapped 4"
H	4" Middle
B	Back

*Use 4-inch outlet for steam or gravity hot water; use 2½-inch outlet for forced hot water.

Auxiliary Tappings: Has 2½-inch tappings on both sides of back section below the water line for water heater or low water cut-off; 1½-inch for external water heater or surface blow-off; and 1-inch below water line for aquastat.

Trimmings: Include damper regulator, poker, and flue brush; on steam boilers, a recessed water gauge, compound pressure-vacuum gauge, safety valve, and fusible plug; on water boilers, a combination altitude gauge and thermometer.

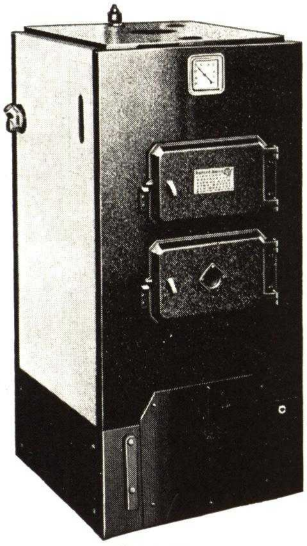
Built-in Water Heater: Available on order in 40 and 100-gallon capacities.

The I-B-R emblem signifies that the boiler has been tested and rated according to the Testing and Rating Codes adopted by the Institute of Boiler and Radiator Manufacturers. At present these codes apply only to boilers having a grate width of 20 inches or less.

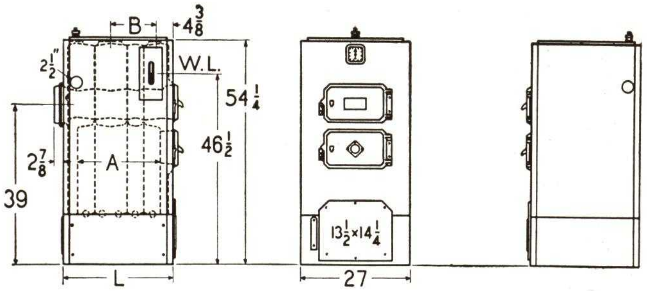
Use of the I-B-R emblem and I-B-R ratings is controlled by the Institute. Before a manufacturer may adopt and use the I-B-R emblem and I-B-R ratings for any series of boilers, test data must be submitted to the Technical Committee of the Institute for review and approval. This committee consists of a representative, impartial body of engineers. The purpose of this review is to determine that the tests have been accurately performed and that the ratings requested by the manufacturer conform to the limits of the I-B-R Codes.

Series G Cast Iron Heating Boilers

Type GP Boilers for Oil Firing



Type GP



No.	Net I-B-R Rating Steam Sq. Ft.	Net I-B-R Rating Water Sq. Ft.	Net I-B-R Rating BTU.	Gross I-B-R Output BTU.	Chimney Size Inches	Chimney Height Feet	Heating Surface Sq. Ft.	I-B-R Burner Capacity Gallons
GP-24	400	645	96,000	146,000	8x8	30	32.5	1.50
GP-28	470	755	113,000	171,000	8x12	30	37.6	1.75
GP-32	540	865	130,000	195,000	8x12	30	42.7	1.95
GP-36	610	975	146,000	220,000	8x12	35	47.8	2.20
GP-40	680	1085	163,000	244,000	8x12	35	52.9	2.35

Dimensions and Section Assemblage

No.	Dimensions, Inches A	Dimensions, Inches B	Dimensions, Inches L	*Outlets No.	*Outlets Size Inches	*Outlets No.	*Outlets Size Inches	Inlets No.	Inlets Size Inches	Assemblage
GP-24	20⅛	10⅝	27	1	2½	1	4	2	3	FT-H-MT-B
GP-28	24⅛	14⅝	31	1	2½	1	4	2	3	FT-M-MT-B
GP-32	28⅛	18⅝	35	1	2½	1	4	2	3	FT-M-H-MT-B
GP-36	32⅛	14⅝	39	1	2½	1	4	2	3	FT-M-MT-M-B
GP-40	36⅛	18⅝	43	1	2½	1	4	2	3	FT-M-H-MT-M-B

Key to Sections	
FT	Front Tapped 2½"
M	8" Middle
MT	8" Middle Tapped 4"
H	4" Middle
B	Back

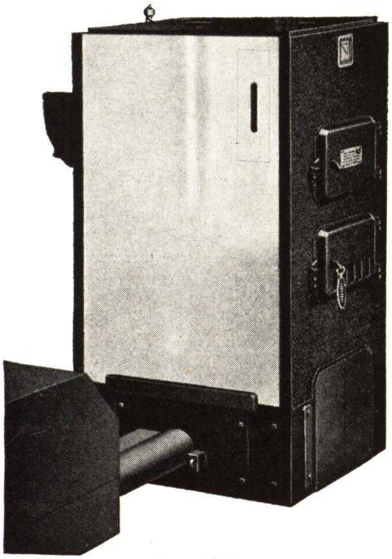
*Use 4-inch outlet for steam or gravity hot water; use 2½-inch outlet for forced hot water.

Auxiliary Tappings: Has 2 ½-inch tappings on both sides of back section below the water line for water heater or low water cut-off; 1 ½-inch for external water heater or surface blow-off; and 1-inch below water line for aquastat.

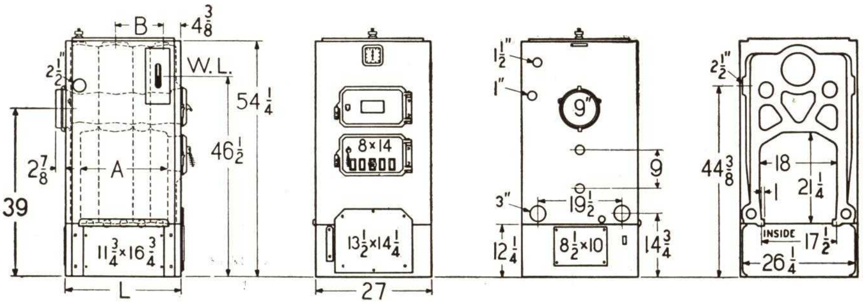
Trimmings: Include flue brush, shielded Pyrex peephole, and economizer baffle; on steam boilers, a recessed water gauge, compound pressure-vacuum gauge, safety valve, and fusible plug; on water boilers, a combination altitude gauge and thermometer.

Built-in Water Heater: Available on order in 66-gallon capacity.

Type GM Boilers for Stoker Firing



Type GM



No.	Net I-B-R Rating Steam Sq. Ft.	Net I-B-R Rating Water Sq. Ft.	Net I-B-R Rating BTU.	Gross I-B-R Output BTU.	Chimney Size Inches	Chimney Height Feet	I-B-R Burner Capacity Pounds
GM-24	400	645	96,000	146,000	8x8	30	16
GM-28	470	755	113,000	171,000	8x12	30	19
GM-32	540	865	130,000	195,000	8x12	30	21
GM-36	610	975	146,000	220,000	8x12	35	24
GM-40	680	1085	163,000	244,000	8x12	35	27

Dimensions and Section Assemblage

No.	Dimensions, Inches A	Dimensions, Inches B	Dimensions, Inches L	*Outlets No.	*Outlets Size Inches	*Outlets No.	*Outlets Size Inches	Inlets No.	Inlets Size Inches	Assemblage
GM-24	20⅛	10⅝	27	1	2½	1	4	2	3	FT-H-MT-B
GM-28	24⅛	14⅝	31	1	2½	1	4	2	3	FT-M-MT-B
GM-32	28⅛	18⅝	35	1	2½	1	4	2	3	FT-M-H-MT-B
GM-36	32⅛	14⅝	39	1	2½	1	4	2	3	FT-M-MT-M-B
GM-40	36⅛	18⅝	43	1	2½	1	4	2	3	FT-M-H-MT-M-B

Key to Sections	
FT	Front Tapped 2½"
M	8" Middle
MT	8" Middle Tapped 4"
H	4" Middle
B	Back

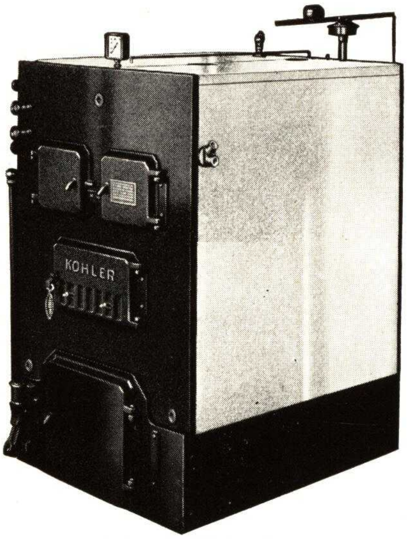
*Use 4-inch outlet for steam or gravity hot water; use 2½-inch outlet for forced hot water.

Auxiliary Tappings: Has 2½-inch tappings on both sides of back section below the water line for water heater or low water cut-off; 1½-inch for external water heater or surface blow-off; and 1-inch below water line for aquastat.

Trimmings: Include poker, flue brush, and one reversible open base side; two open base sides are available on special order; on steam boilers, a recessed water gauge, compound pressure-vacuum gauge, safety valve, and fusible plug; on water boilers, a combination altitude gauge and thermometer.

Built-in Water Heater: On order, in 66-gallon capacity.

Series D Cast Iron Heating Boilers



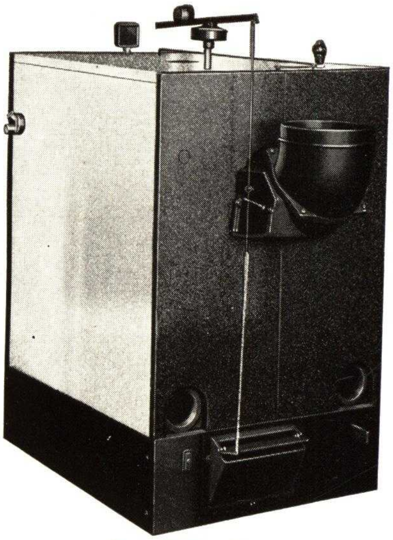
Type D, Front View

Designed for moderately large heating installations.

Has large upper nipples to promote rapid internal circulation between sections, tappings properly situated for automatic controls, large direct and indirect heating surfaces, and a firebox with a coal capacity designed for long firing periods.

For hand firing, the choke damper is controlled from the front of the boiler.

A domestic hot water heater is built into the front section at the right side. This heater is located just below the water line of steam boilers where it performs with maximum efficiency. Because of free internal circulation through the large upper nipples, it is unnecessary to use an external manifold for the water heater, regardless of its size. A 2½-inch heater tapping is regularly furnished, but for large external heaters a 3-inch tapping will be furnished on special order.

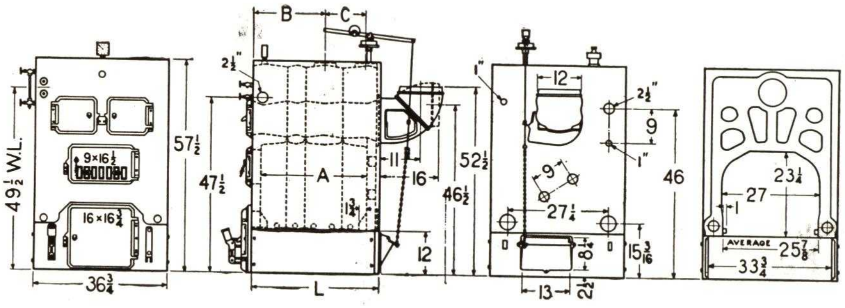


Type D, Rear View

Type D Boilers for Hand Firing

No.	Net I-B-R Rating: Steam Sq. Ft.	Net I-B-R Rating: Water Sq. Ft.	Net I-B-R Rating: BTU.	Gross I-B-R Output BTU.	Grate Area Sq. Ft.	Fuel Cap. Lb.	Chimney: Size Inches	Chimney: Height Feet
D-35	800	1280	192,000	403,000	5.4	480	12x12	35
D-40	950	1520	228,000	468,000	6.3	560	12x12	35
D-45	1100	1760	264,000	531,000	7.2	640	12x12	35
D-50	1265	2020	304,000	600,000	8.1	730	12x16	38
D-55	1430	2285	343,000	666,000	9.0	825	12x16	42
D-60	1600	2560	384,000	735,000	9.9	920	12x16	45

Dimensions and Section Assemblage



No.	Dimensions, Inches: A	B	C	L	Outlets: No.	Outlets: Size Inches	Inlets: No.	Inlets: Size Inches	Assemblage
D-35	28½	19¼	11	35	2	4	2	4	F-H-MT-BT
D-40	33½	14¼	21	40	2	4	2	4	F-MT-M-BT
D-45	38½	19¼	21	45	2	4	2	4	F-H-MT-M-BT
D-50	43½	14¼	31	49¾	2	4	2	4	F-MT-M-M-BT
D-55	48½	19½	10+21	54¾	3	4	2	4	F-H-MT-MT-M-BT
D-60	53½	14¼	30+11	59¾	3	4	2	4	F-MT-M-M-RT-BT

Key to Sections

F	Front
H	5″ Middle
M	10″ Middle
MT	Tapped 10″ Middle
RT	Rear Uptake Tapped
BT	Back Tapped

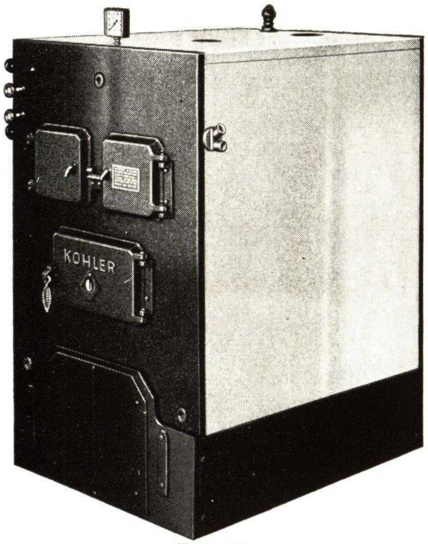
Auxiliary Tappings: Tapped 2½ inches below the water line, on the rear of the back section for low water cut-off or external water heater; 2½ inches on right of front section for built-in trombone type water heater (may be 3 inches on order); 1 inch on back section for aquastat.

Trimmings: Include damper regulator, poker, and flue scraper; on steam boilers, a water gauge, pressure gauge, safety valve, and fusible plug; on water boilers, a combination altitude gauge and thermometer.

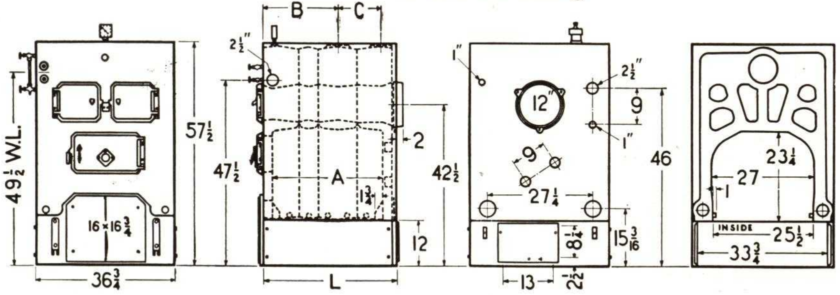
Built-in Water Heater: Available on order in 40, 100, and 130-gallon capacities.

Series D Cast Iron Heating Boilers

Type DP Boilers for Oil Firing



Type DP



No.	Net I-B-R Rating Steam Sq. Ft.	Net I-B-R Rating Water Sq. Ft.	Net I-B-R Rating BTU.	Gross I-B-R Output BTU.	Chimney Size Inches	Chimney Height Feet	Heat Surface Sq. Ft.	I-B-R Burner Capacity Gallons
DP-35	640	1025	154,000	230,000	12x12	25	55.5	2.40
DP-40	800	1280	192,000	285,000	12x12	25	62.3	2.95
DP-45	965	1545	232,000	340,000	12x12	30	72.0	3.50
DP-50	1130	1810	271,000	395,000	12x12	30	78.8	4.05
DP-55	1295	2075	311,000	449,000	12x12	35	88.5	4.55
DP-60	1460	2335	350,000	502,000	12x16	35	95.3	5.05
DP-65	1625	2600	390,000	555,000	12x16	40	105.0	5.55
DP-70	1790	2860	430,000	608,000	12x16	40	111.8	6.00

Dimensions and Section Assemblage

No.	Dimensions, Inches A	B	C	L	Outlets No.	Outlets Size Inches	Inlets No.	Inlets Size Inches	Assemblage
DP-35	28½	19¼	11	35	2	4	2	4	F-H-MT-BT
DP-40	33½	14¼	21	40	2	4	2	4	F-MT-M-BT
DP-45	38½	19¼	21	45	2	4	2	4	F-H-MT-M-BT
DP-40	43½	14¼	31	49¾	2	4	2	4	F-MT-M-M-BT
DP-55	48½	19¼	10+21	54¾	3	4	2	4	F-H-MT-MT-M-BT
DP-60	53½	14¼	30+11	59¾	3	4	2	4	F-MT-M-M-RT-BT
DP-65	58½	19¼	10+20+11	64¾	4	4	2	4	F-H-MT-MT-M-RT-BT
DP-70	63½	14¼	20+20+11	69¾	4	4	2	4	F-MT-M-MT-M-RT-BT

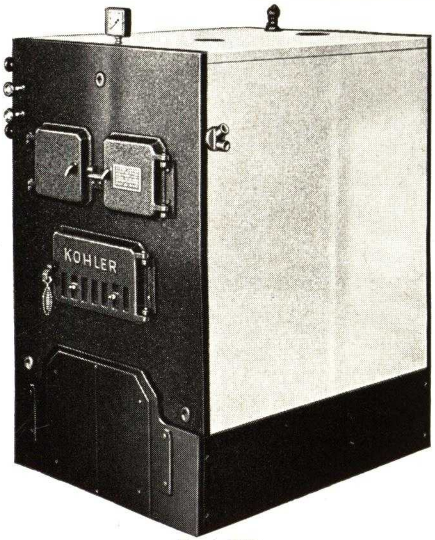
Key to Sections	
F	Front
H	5″ Middle
M	10″ Middle
MT	Tapped 10″ Middle
RT	Rear Uptake Tapped
BT	Back Tapped

Auxiliary Tappings: Tapped 2½ inches below the water line, on the rear of the back section for low water cutoff or external water heater; 2½ inches on right of front section for built-in trombone type water heater (may be 3 inches on order); 1 inch on back section for aquastat.

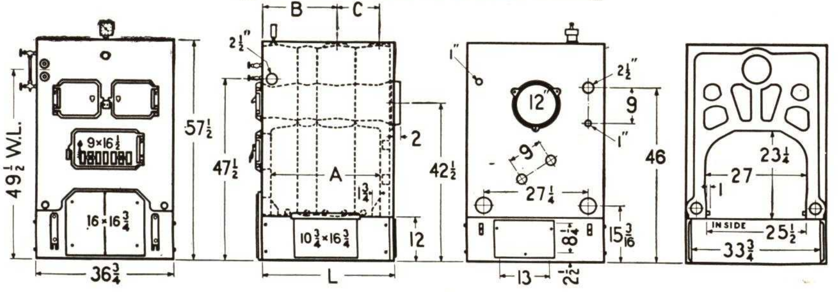
Trimmings: Include flue scraper and shielded Pyrex peephole; on steam boilers, a water gauge, pressure gauge, safety valve and fusible plug; on water boilers, a combination altitude gauge and thermometer.

Built-in Water Heater: Available on order in 66 and 90-gallon capacities.

Type DM Boilers for Stoker Firing



Type DM



No.	Net I-B-R Rating Steam Sq. Ft.	Net I-B-R Rating Water Sq. Ft.	Net I-B-R Rating BTU.	Gross I-B-R Output BTU.	Chimney Size Inches	Chimney Height Feet	Heat Surface Sq. Ft.	I-B-R Burner Capacity Pounds
DM-35	640	1025	154,000	230,000	12x12	35	55.5	25
DM-40	800	1280	192,000	285,000	12x12	35	62.3	31
DM-45	965	1545	232,000	340,000	12x12	35	72.0	37
DM-50	1130	1810	271,000	395,000	12x16	38	78.8	43
DM-55	1295	2075	311,000	449,000	12x16	42	88.5	49
DM-60	1460	2335	350,000	502,000	12x16	45	95.3	55
DM-65	1625	2600	390,000	555,000	12x16	48	105.0	61
DM-70	1790	2860	430,000	608,000	12x16	50	111.8	67

Dimensions and Section Assemblage

No.	Dimensions, Inches A	B	C	L	Outlets No.	Outlets Size Inches	Inlets No.	Inlets Size Inches	Assemblage
DM-35	28½	19¼	11	35	2	4	2	4	F-H-MT-BT
DM-40	33½	14¼	21	40	2	4	2	4	F-MT-M-BT
DM-45	38½	19¼	21	45	2	4	2	4	F-H-MT-M-BT
DM-50	43½	14¼	31	49¾	2	4	2	4	F-MT-M-M-BT
DM-55	48½	19¼	10+21	54¾	3	4	2	4	F-H-MT-MT-M-BT
DM-60	53½	14¼	30+11	59¾	3	4	2	4	F-MT-M-M-RT-BT
DM-65	58½	19¼	10+20+11	64¾	4	4	2	4	F-H-MT-MT-M-RT-BT
DM-70	63½	14¼	20+20+11	69¾	4	4	2	4	F-MT-M-MT-M-RT-BT

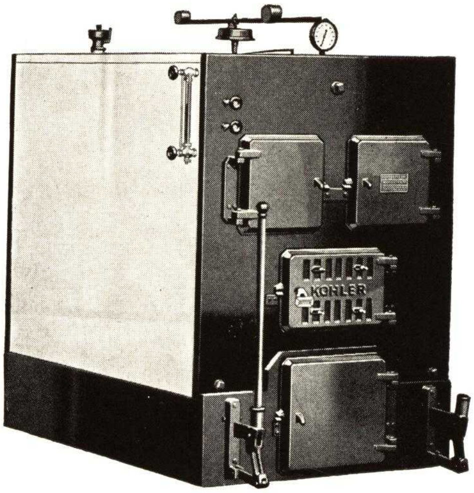
Key to Sections	
F	Front
H	5″ Middle
M	10″ Middle
MT	Tapped 10″ Middle
RT	Rear Uptake Tapped
BT	Back Tapped

Auxiliary Tappings: Tapped 2½ inches below the water line, on the rear of the back section for low water cutoff or external water heater; 2½ inches on right of front section for built-in trombone type water heater (may be 3 inches on order); 1 inch on back section for aquastat.

Trimmings: Include poker, flue scraper, and one reversible open base side; two open base sides are available on special order; on steam boilers, a water gauge, pressure gauge, safety valve, and fusible plug; on water boilers, a combination altitude gauge and thermometer.

Built-in Water Heater: Available on order in 66 and 90-gallon capacities.

Series F Cast Iron Heating Boilers



Type F-36

Sectional boilers designed for large installations such as apartments, stores, office buildings, garages, or other buildings requiring up to 4,700 square feet of installed steam radiation, or 7,520 square feet of installed hot water radiation. For jobs requiring larger installations, they may be used in multiple.

The sectional construction of these boilers makes it possible to install them in basements whose only access is through ordinary size doors.

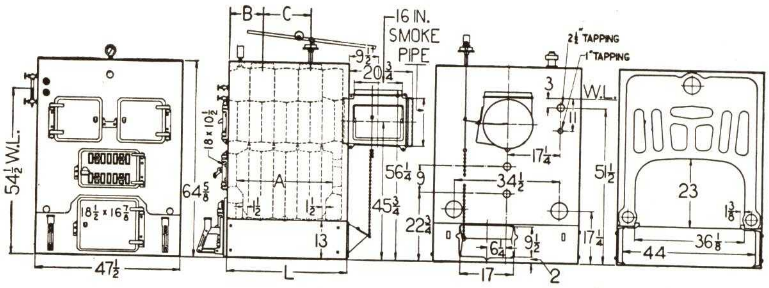
The large firebox capacity not only permits long firing periods without special attention, but also provides a maximum of radiant heat-absorbing surface. Seven scientifically proportioned flues furnish unusual secondary heat-absorbing surface while the gases of combustion travel three times through the length of the boiler, thus assuring high operating efficiency and low operating cost.

The firebox is corrugated. Grates are cast of special chrome alloy iron, resistant to the warping and burning action of heat, and are non-dislodging. The arched crown-sheet promotes rapid internal circulation of water, while internal baffles and large steam liberating space eliminate any possibility of surging or priming. The low water line—less than 55 inches—permits installation in low basements without the necessity of expensive pitting.

Type F-36 Boilers for Hand Firing

No.	Net I-B-R Rating Steam Sq. Ft.	Water Sq. Ft.	BTU.	Gross I-B-R Output BTU.	Grate Area Sq. Ft.	Fuel Cap. Lb.	Chimney Size Inches	Height Feet
F-36x32	1645	2630	395,000	753,000	7.4	650	16x16	45
F-36x40	2095	3350	503,000	930,000	9.4	825	16x16	50
F-36x48	2550	4080	612,000	1,101,000	11.4	1000	16x20	55
F-36x56	3035	4855	728,000	1,274,000	13.4	1175	20x20	60
F-36x64	3540	5665	849,000	1,447,000	15.4	1350	20x20	64
F-36x72	4065	6505	976,000	1,620,000	17.4	1525	20x24	68

Dimensions and Section Assemblage



No.	Dimensions, Inches A	B	C	L	Outlets No.	Size Inches	Inlets No.	Size Inches	Assemblage
F-36x32	31½	10½	16	39½	2	5	2	5	F-MT-M-RT-B
F-36x40	39½	10½	24	47½	2	5	2	5	F-MT-M-M-RT-B
F-36x48	47½	10½	16+16	55½	3	5	2	5	F-MT-M-MT-M-RT-B
F-36x56	55½	10½	24+16	63½	3	5	2	5	F-NT-M-M-MT-M-RT-B
F-36x64	63½	10½	16+16+16	71½	4	5	2	5	F-NT-M-MT-M-MT-R-RT-B
F-36x72	71½	10½	16+24+16	79½	4	5	2	5	F-NT-N-MT-M-M-RT-R-RT-B
F-36x80	79½	10½	16+32+16	87½	4	5	2	5	F-NT-N-MT-M-M-M-RT-R-RT-B
F-36x88	87½	10½	16+40+16	95½	4	5	2	5	F-NT-N-MT-M-M-M-M-RT-R-RT-B

Key to Sections

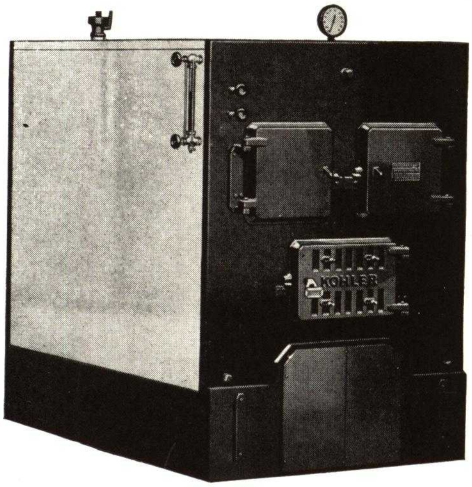
F	Front
M	Middle
MT	Tapped Middle
R	Rear Uptake
RT	Tapped Rear Uptake
NT	Tapped Front Flue
N	Front Flue
B	Back

AUXILIARY TAPPINGS: Tapped 2½ inches below the water line, on the rear of the back section for built-in low water cut-off. All sections are provided with bosses on either side, which may be tapped for manifolding indirect water heaters. These will be tapped as ordered. Furnished with ¾-inch tapping unless otherwise specified.

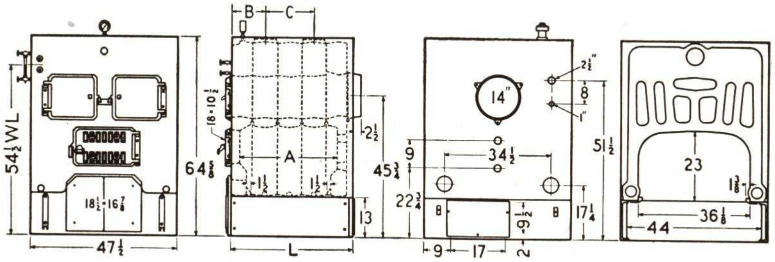
TRIMMINGS: Include damper regulator, poker, slice-bar, and flue brush, on steam boilers, a water gauge, pressure gauge, safety valve, and fusible plug; on water boilers, a combination altitude gauge and thermometer.

Series F Cast Iron Heating Boilers

Type FP-36 Boilers for Oil Firing



Type FP-36



No.	Net I-B-R Rating Steam Sq. Ft.	Net I-B-R Rating Water Sq. Ft.	Net I-B-R Rating BTU.	Gross I-B-R Output BTU.	Chimney Size Inches	Chimney Height Feet	Heat Surface Sq. Ft.	I-B-R Burner Capacity Gallons
FP-36x40	1810	2900	434,000	613,000	16x16	40	126.6	6.10
FP-36x48	2220	3560	533,000	742,000	16x16	45	149.5	7.35
FP-36x56	2640	4230	634,000	873,000	16x20	50	172.4	8.65
FP-36x64	3090	4945	741,000	1,007,000	16x20	50	195.3	9.90
FP-36x72	3525	5640	846,000	1,138,000	20x20	55	218.2	11.20
FP-36x80	3970	6350	953,000	1,269,000	20x20	55	241.1	12.50
FP-36x88	4420	7040	1,061,000	1,400,000	20x20	60	264.0	13.70

Dimensions and Section Assemblage

No.	Dimensions, Inches A	B	C	L	Outlets No.	Outlets Size Inches	Inlets No.	Inlets Size Inches	Assemblage
FP-36x40	39½	10½	24	47½	2	5	2	5	F-MT-M-M-RT-B
FP-36x48	47½	10½	16+16	55½	3	5	2	5	F-MT-M-MT-M-RT-B
FP-36x56	55½	10½	24+16	63½	3	5	2	5	F-NT-M-M-MT-M-RT-B
FP-36x64	63½	10½	16+16+16	71½	4	5	2	5	F-NT-M-MT-M-MT-R-RT-B
FP-36x72	71½	10½	16+24+16	79½	4	5	2	5	F-NT-N-MT-M-M-RT-R-RT-B
FP-36x80	79½	10½	16+32+16	87½	4	5	2	5	F-NT-N-MT-M-M-M-RT-R-RT-B
FP-36x88	87½	10½	16+40+16	95½	4	5	2	5	F-NT-N-MT-M-M-M-M-RT-R-RT-B

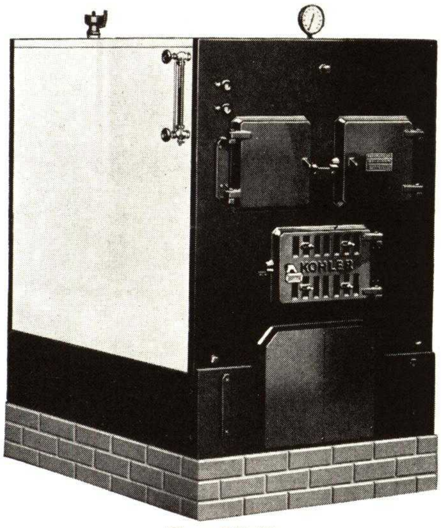
Key to Sections

F	Front
M	Middle
MT	Tapped Middle
R	Rear Uptake
RT	Tapped Rear Uptake
NT	Tapped Front Flue
N	Front Flue
B	Back

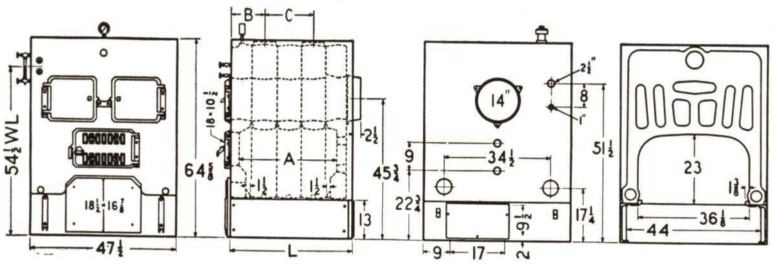
Auxiliary Tappings: Tapped 2½ inches below the water line, on the rear of the back section for built-in low water cut-off. All sections are provided with bosses on either side, which may be tapped for manifolding indirect water heaters. These will be tapped as ordered. Furnished with ¾-inch tapping unless otherwise specified.

Trimmings: Include a flue brush; on steam boilers, a water gauge, pressure gauge, safety valve, and fusible plug; on water boilers, a combination altitude gauge and thermometer.

Type FM-36 Boilers for Stoker Firing



Type FM-36



No.	Net I-B-R Rating Steam Sq. Ft.	Net I-B-R Rating Water Sq. Ft.	Net I-B-R Rating BTU.	Gross I-B-R Output BTU.	Chimney Size Inches	Chimney Height Feet	Heat Surface Sq. Ft.	I-B-R Burner Capacity Pounds
FM-36x40	1810	2900	434,000	613,000	16x16	40	126.6	67
FM-36x48	2220	3560	533,000	742,000	16x16	45	149.5	82
FM-36x56	2640	4230	634,000	873,000	16x20	50	172.4	96
FM-36x64	3090	4945	741,000	1,007,000	16x20	50	195.3	111
FM-36x72	3525	5640	846,000	1,138,000	20x20	55	218.2	125
FM-36x80	3970	6350	953,000	1,269,000	20x20	55	241.1	139
FM-36x88	4420	7040	1,061,000	1,400,000	20x20	60	264.0	154

Dimensions and Section Assemblage

No.	Dimensions, Inches A	B	C	L	Outlets No.	Outlets Size Inches	Inlets No.	Inlets Size Inches	Assemblage
FM-36x40	39½	10½	24	47½	2	5	2	5	F-MT-M-M-RT-B
FM-36x48	47½	10½	16+16	55½	3	5	2	5	F-MT-M-MT-M-RT-B
FM-36x56	55½	10½	24+16	63½	3	5	2	5	F-NT-M-M-MT-M-RT-B
FM-36x64	63½	10½	16+16+16	71½	4	5	2	5	F-NT-M-MT-M-MT-R-RT-B
FM-36x72	71½	10½	16+24+16	79½	4	5	2	5	F-NT-N-MT-M-M-RT-R-RT-B
FM-36x80	79½	10½	16+32+16	87½	4	5	2	5	F-NT-N-MT-M-M-M-RT-R-RT-B
FM-36x88	87½	10½	16+40+16	95½	4	5	2	5	F-NT-N-MT-M-M-M-M-RT-R-RT-B

Key to Sections

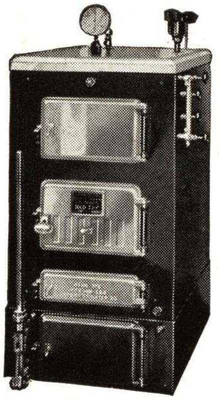
F	Front
M	Middle
MT	Tapped Middle
R	Rear Uptake
RT	Tapped Rear Uptake
NT	Tapped Front Flue
N	Front Flue
B	Back

Auxiliary Tappings: Tapped 2½ inches below the water line, on the rear of the back section for built-in low water cut-off. All sections are provided with bosses on either side, which may be tapped for manifolding indirect water heaters. These will be tapped as ordered. Furnished with ¾-inch tapping unless otherwise specified.

Trimmings: Include a flue brush; on steam boilers, a water gauge, pressure gauge, safety valve, and fusible plug; on water boilers, a combination altitude gauge and thermometer.

Capitol Red Top Boilers

For Steam and Water



A Series

Heavy gage steel jacket with baked enamel finish, brass trimmings. Standard doors are black. Sides, top and back rock wool insulated. Grate bars are sturdy and free shaking, easily removed. Heat absorbing surfaces of sections are proportioned to provide even, smooth passages and easy, free turns for hot gases as they thrice travel length of boiler, giving up heat.

Can be supplied with steel base for automatic stoker or oil burner installations, and the larger Red Tops, B and C series, are also made in smokeless type for burning bituminous coals. Equipped with combination top and back outlet smoke hood.

A Series

Height, including trimmings, 59⅝ inches; width, 32⅞ inches. Height of water line, 42½ inches. Clearance between grate lugs, 15½ inches.

Tapped: Has 2 outlets; 1 tapped 4 inches and 1 tapped 3 inches. Has 2 inlets, both tapped 3 inches.

Size chimney flue, 8x12 inches.

Stoker-fired boiler shipped less all grates and shaking apparatus, ash pit door, damper regulator complete, firing tools, excepting flue brush and handle. Fire doors on stoker-fired boiler equipped with special liners.

	For All Fuels Net I-B-R Rating Sq. Ft. Direct Cast Iron Radiation		For Stoker Firing Net I-B-R Rating Sq. Ft. Direct Cast Iron Radiation		For Stoker Firing
No.	Steam	Water	Steam	Water	I-B-R Firing Rate Lb. per Hr.
A-7	340	545	390	625	16
A-8	440	705	445	710	18
A-9	540	865	505	810	20
A-10	640	1025	560	895	22
A-11	740	1185	620	990	24

	For Oil Firing Net I-B-R Rating Sq. Ft. Direct Cast Iron Radiation		For Oil Firing	
No.	Steam	Water	I-B-R Firing Rate GPH.	Chimney Ht. Ft.
A-07	390	625	1.45	32
A-08	445	710	1.60	34
A-09	505	810	1.80	36
A-010	560	895	1.95	38
A-011	620	990	2.15	40

B Series

Height, including trimmings, 65⅞ inches; width, 42⅝ inches.

Tapped: Has 2 4-inch outlets and 2 4-inch inlets, except B-7 hand fired and stoker-fired boiler, 1 4-inch outlet.

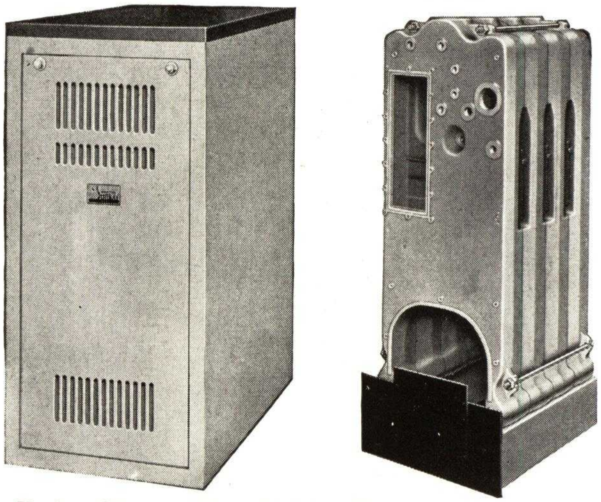
	For Hand Firing Net I-B-R Rating Sq. Ft. Direct Cast Iron Radiation		For Stoker Firing Net I-B-R Rating Sq. Ft. Direct Cast Iron Radiation		Chimney	
No.	Steam	Water	Steam	Water	Flue Size In.	Ht. Ft.
B-7	740	1180	740	1180	8x12	38
B-8	920	1470	920	1470	12x12	38
B-9	1110	1770	1100	1770	12x16	40
B-10	1275	2040	1275	2040	12x16	40
B-11	1440	2300	1440	2300	12x16	43
B-12	1580	2530	1580	2530	12x16	46
B-13	1730	2770	1730	2770	12x16	50
B-14	1880	3000	1880	3000	12x16	50

C Series

Height, including trimmings, 73¾ inches; width, 54¼ inches. Height of water line, 55 inches. Clearance between grate lugs, 34⅜ inches.

	For All Fuels and Smokeless Types Sq. Ft. Direct Cast Iron Radiation		For Oil Firing	Sq. Ft. Direct Cast Iron Radiation		Outlets Size		Inlets Size		Chimney	
No.	Steam	Water	No.	Steam	Water	No.	In.	No.	In.	Flue Size In.	Ht. Ft.
C-12	2250	3600	.....	....	....	2	5	2	6	16x20	50
***C-14**	2715	4345	.....	....	....	3	5	2	6	20x20	55
***C-16**	3180	5090	C-**016**	2930	4690	3	5	2	6	20x20	60
***C-18**	3645	5830	C-**018**	3485	5575	4	5	2	6	20x24	65
***C-20**	4110	6575	C-**020**	4050	6480	4	5	2	6	20x24	70
***C-22**	4575	7320	C-**022**	4575	7320	4	5	2	6	20x24	75
***C-24**	5040	8065	C-**024**	5045	8070	4	5	2	6	24x28	75
***C-26**	5450	8720	C-**026**	5455	8730	5	5	2	6	24x28	80
***C-28**	5800	9280	C-**028**	5805	9290	5	5	2	6	24x28	90
***C-30**	6110	9775	C-**030**	6110	9775	5	5	2	6	24x28	95

Series 2 Capitol Sunray Boilers



Designed to provide a highly efficient, yet moderately priced boiler for modern, automatic heating. The boiler is furnished with a two-tone green jacket which completely encloses the burner, controls, and accessories.

Boiler is mounted on a steel base, has an unusually large combustion space and a positive and unrestricted internal water circulation. Sections are connected with slip-nipples. Individual sections are ground to permit an iron-to-iron assembly. The burner compartment is readily accessible for the installation or servicing of the burner, controls, or accessories.

Rock wool insulation covers the sides, back, and top of this boiler. Flue covers and front firebox cover plate are specially insulated with a cast insulating refractory.

Equipped with a Biltin Taco Domestic Heater, which makes possible year-round operation of the boiler to furnish a dependable, domestic hot water supply. When desired, a Biltin Tankless Taco Heater can be furnished at added cost.

No.	**2–03**	**2–04**	**2–05**	**2–06**
*Net I-B-R Rating:				
Steam....sq. ft.	350	500	650	800
Water....sq. ft.	560	800	1040	1280
Btu....	84000	120000	156000	192000
†Gross I-B-R Output.Btu.	12900	18200	23400	28500
Maximum I-B-R Firing Rate....gph.	1.3	1.8	2.5	2.7
Boiler Outlets				
No....	1	2	2	2
Size....inches	3	3	3	3
Boiler Inlets				
No....	1	1	1	1
Size....inches	4	4	4	4
Combustion Chamber from Floor to Crown Sheet....cu. ft.	3.65	5.32	6.99	8.66
Approx. Ship. Weight				
Steam....pounds	950	1155	1380	1620
Water....pounds	945	1155	1380	1615

*All ratings expressed in square feet are based on a heat emission of 240 Btu. per square foot for steam and 150 Btu. per square feet for hot water.

A 30 gallon Biltin Taco Heater is standard equipment and when this size heater is used deduct 1.00 square foot (steam) and 1.6 square feet (water) from Net I-B-R Rating for each gallon of water to be heated.

Optional sizes of Biltin Taco Heaters are available.

All domestic water heater ratings are based on 40°–140°F. in three hours at a minimum boiler water temperature of 180°F.

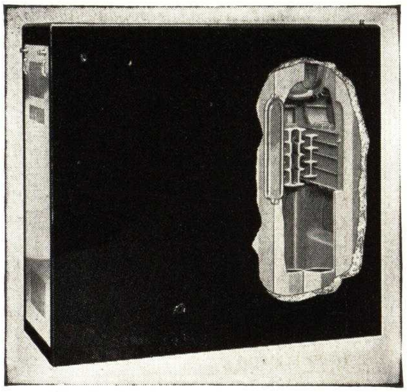
Special Biltin Tankless Taco Heaters of 180 or 210-gallon capacity can be supplied. When a Tankless Taco Heater is used, deduct 50 square feet (steam) or 80 square feet (water) per bathroom, from Net I-B-R Rating.

A McDonnell-Miller low water cut-off is standard equipment.

Refractory linings for combustion chambers can be furnished on special order and at an additional charge.

†Use Net I-B-R Rating for selection of boiler size.

No. U-S-20 Capitol Oil Burning Boilers



Designed to be used with gun or pressure type burner in small homes.

Economy-Plates are cast of heat resisting alloy. They break up and scatter the hot gases into small streams, changing their direction but controlling their flow, forcing them to impart a still greater portion of their heat by a scrubbing action on the water-backed surfaces.

Heavily insulated against heat loss.

Positive and unrestricted internal water circulation as well as circulation through the upper nipple ports.

Built-in Taco domestic heater is standard equipment.

Boiler, burner, controls and accessories are enclosed in a steel jacket, finished in baked enamel.

A convenient switch on the outside of the jacket operates the light within the compartment.

McDonnell & Miller Low-Water Cutoff is standard equipment; in addition, openings are provided for pressure control, aquastats and stack switch.

No.	U-S-**20-3**	U-S-**20-4**	U-S-**20-5**	U-S-**20-6**
*Direct C. I. Rad.				
Load........sq. ft.				
Steam............	290	415	540	665
Water............	460	665	865	1060
Oil Input........Btu.	133632	191232	245499	306432
†Min. Burner Cap. ....gph.	.98	1.41	1.81	2.25
Heat. Surface..sq. ft.	24.9	35.8	46.7	57.5
Boiler Output....Btu	100224	143424	186624	229824
Chimney				
Flue Size....inches	8x8	8x12	8x12	8x12
Height.........feet	30	30	30	30
Combustion Chamber				
Size.........cu. ft.	1.8	2.75	3.7	4.6
Height......inches	21	21	21	21
Length......inches	11 7/16	17 7/16	23 7/16	29 7/16
Width.......inches	15	15	15	15
Boiler Outlets				
No................	1	2	2	2
Size.........inches	3	3	3	3
Boiler Inlets				
No...............	1	1	1	1
Size.........inches	4	4	4	4
Approx. Ship. Wt.				
Steam......pounds	960	1185	1430	1675
Water......pounds	955	1180	1425	1670

*4000 Btu. Transmission rate.

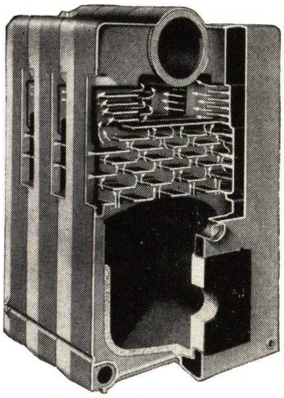
†19700 Btu. per pound, 6.9 pounds per gallon.

All ratings expressed in sq. ft. are based on a heat emission of 240 Btu. per sq. ft. for steam and 150 Btu. for hot water.

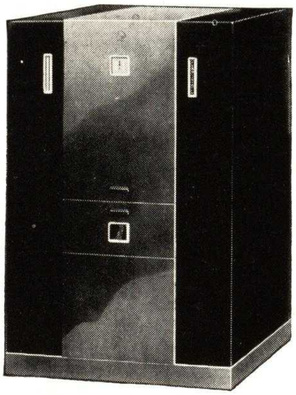
A 40-gallon built-in domestic water heating coil is standard equipment and when this size coil is used deduct 30 square feet (steam) and 60 sq. ft. (water) from direct C. I. rad. load rating. On special order and at an additional charge, a 100-gallon built-in coil can be furnished. For each gallon of indirect water heater capacity deduct 0.75 sq. ft. (steam) and 1.5 sq. ft. (water) from direct C. I. rad. load rating. All domestic water heater ratings are based on 50° to 150°F. in 3 hours at a minimum boiler water temperature of 180°. Where built-in domestic water heater is not used the opening in the boiler is covered with a plate having a 2-inch tapping for the upper connection externally connected water heater.

Prices on Application

U.S.-25 Series Capitol Boilers



Showing Fire Travel



U.S.-25 Series Boiler

Water circulation within the Capitol oil burning boiler is positive and unrestricted. Definite up and down currents are established which make for complete separation of steam and water.

The boiler water is carried beneath the combustion chamber and utilizes the heat radiated downward by the burner flame to generate steam.

A copper domestic hot water heating coil is built into the Capitol oil burning boiler.

The U.S.-25 Series boiler has extended rib type heating surface; large combustion chamber; low draft loss; quick steaming; front or rear firing; wet base construction; ground joints between sections; unique gas travel; positive internal water circulation; large steam liberating surface and compact size.

Complete information and prices upon application.

U. S. CAPITOL BOILER REPAIR PARTS

☆

We offer repairs for Capitol Steam and Hot Water Boilers. In ordering, please give the name and catalog number of the part, together with the name and number of the boiler with its serial or series number. Due to changes in the construction of the different types of boilers, it is important that the serial or series number be given.

WHEN ORDERING *please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.*

American Gas Boilers
Standard Model
For Steam or Hot Water

Gas valve is electrically operated from room thermostat. Steam pressure or water temperature throttles gas flow to maintain required conditions.

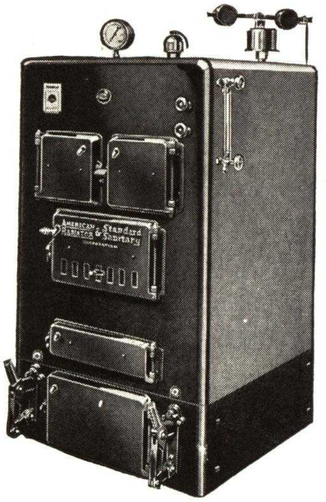
Low water cutout completely shuts off supply of gas to main burners if the water line on steam boiler reaches a low point. Quiet burners, raised drill ports, blue flame.

Thermostatic pilot is protected from moisture or dirt. Keeps gas supply valve closed unless pilot is burning. Venturi burner tube induces proper velocity to gas and primary air, and obtains the correct mixture.

Pintype cast iron section, heat-absorbing surface. Absorbs heat from rising columns of hot gases, and transfers this heat to the water within. Thick asbestos air-cell insulation prevents heat loss from boiler.

Jacket is attractively finished; and has black enamel trimming.

Ideal Redflash Boilers
Hand-Fired Coal



Efficient and economical, made in sectional design with long flue gallery through which gases of combustion must travel before escaping, a distance twice the boiler's length. Quick pickup capacity, insures rapid heating.

Interposed between the attractive cabinet exterior and the boiler is a heavy layer of indestructible asbestocel insulation to reduce radiation heat loss.

Mechanical regulation is provided on all steam boilers and on water boilers of the 2 Series, with slight extra cost for water boilers of 3, 4, and 5 Series.

Ideal Redflash Boilers
Hand-Fired Coal

Steam

No.	*Installed Rad. Sq. Ft.	No. & Size Tappings—Inches Outlet	No. & Size Tappings—Inches Inlet	Water Line In.	Ht. In.	Approx. Shipping—Wt. Lb. Jacketed	Approx. Shipping—Wt. Lb. Unjacketed
2-S- 6	770	2—4	2—4	50¼	57¼	1964	1839
2-S- 7	940	2—4	2—4	50¼	57¼	2247	2113
2-S- 8	1110	2—4	2—4	50¼	57¼	2414	2268
2-S- 9	1280	2—4	2—4	50¼	57¼	2703	2537
2-S-10	1450	2—4	2—4	50¼	57¼	2910	2732
2-S-11	1620	3—4	2—4	50¼	57¼	3188	2994
3-S- 6	1500	2—4	2—5	53½	63	3411	3227
3-S- 7	1800	3—4	2—5	53½	63	3878	3671
3-S- 8	2100	3—4	2—5	53½	63	4284	4079
3-S- 9	2400	4—4	2—5	53½	63	4735	4512
3-S-10	2700	4—4	2—5	53½	63	5196	4948
3-S-11	3000	4—4	2—5	53½	63	5666	5395
3-S-12	3300	5—4	2—5	53½	63	6098	5803
3-S-13	3600	5—4	2—5	53½	63	6557	6248
4-S- 7	3000	3—4	2—6	55½	65	5233	4995
4-S- 8	3575	3—4	2—6	55½	65	5839	5582
4-S- 9	4150	4—4	2—6	55½	65	6436	6157
4-S-10	4725	4—4	2—6	55½	65	7046	6742
4-S-11	5300	5—4	2—6	55½	65	7676	7351
4-S-12	5875	5—4	2—6	55½	65	8283	7938
4-S-13	6450	6—4	2—6	55½	65	8913	8534
5-S- 8	5000	3—5	2—6	59½	71	8340	8013
5-S- 9	5700	4—5	2—6	59½	71	9283	8927
5-S-10	6400	4—5	2—6	59½	71	10197	9805
5-S-11	7100	5—5	2—6	59½	71	11101	10703
5-S-12	7800	5—5	2—6	59½	71	12081	11653
5-S-13	8500	5—5	2—6	59½	71	13018	12560
5-S-14	9200	6—5	2—6	59½	71	13823	13331
5-S-15	9900	6—5	2—6	59½	71	14719	14199

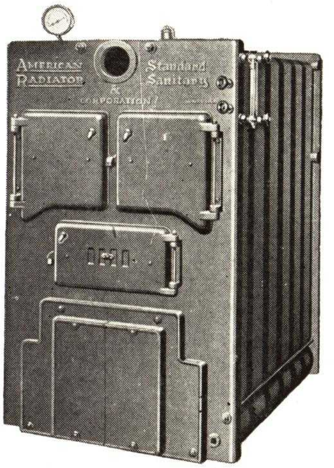
*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads. Sufficient radiation must be installed for the requirements of the building.

Water

No.	*Installed Rad. sq. Ft.	No. & Size Tappings—Inches Outlet	No. & Size Tappings—Inches Inlet	Ht. In.	Approx, Shipping—Wt. Lb. Jacketed	Approx, Shipping—Wt. Lb. Unjacketed	Grate Area Sq. Ft.	Lgth. In.	Width In.
2-W- 6	1230	2—4	2—4	57¼	1959	1834	4.39	30	35¾
2-W- 7	1505	2—4	2—4	57¼	2242	2108	5.28	35	35¾
2-W- 8	1775	2—4	2—4	57¼	2409	2263	6.17	40	35¾
2-W- 9	2050	2—4	2—4	57¼	2697	2531	7.06	45	35¾
2-W-10	2320	2—4	2—4	57¼	2904	2726	7.95	50	35¾
2-W-11	2590	3—4	2—4	57¼	3182	2988	8.84	55	35¾
3-W- 6	2400	2—4	2—5	63	3397	3213	6.65	36	45¾
3-W- 7	2880	3—4	2—5	63	3864	3657	8.00	42	45¾
3-W- 8	3360	3—4	2—5	63	4269	4064	9.35	48	45¾
3-W- 9	3840	4—4	2—5	63	4720	4497	10.70	54	45¾
3-W-10	4320	4—4	2—5	63	5181	4933	12.05	60	45¾
3-W-11	4800	4—4	2—5	63	5651	5380	13.40	66	45¾
3-W-12	5280	5—4	2—5	63	6083	5788	14.75	72	45¾
3-W-13	5760	5—4	2—5	63	6542	6233	16.10	78	45¾
4-W- 7	4800	3—4	2—6	65	5219	4981	11.70	49	53¾
4-W- 8	5720	3—4	2—6	65	5825	5568	13.68	56	53¾
4-W- 9	6640	4—4	2—6	65	6421	6142	15.66	63	53¾
4-W-10	7560	4—4	2—6	65	7031	6727	17.64	70	53¾
4-W-11	8480	5—4	2—6	65	7661	7336	19.62	77	53¾
4-W-12	9400	5—4	2—6	65	8268	7923	21.60	84	53¾
4-W-13	10320	6—4	2—6	65	8898	8519	23.58	91	53¾
5-W- 8	8000	3—5	2—6	71	8325	7998	18.83	64	63
5-W- 9	9120	4—5	2—6	71	9268	8912	21.52	72	63
5-W-10	10240	4—5	2—6	71	10174	9782	24.21	80	63
5-W-11	11360	5—5	2—6	71	11078	10680	26.90	88	63
5-W-12	12480	5—5	2—6	71	12066	11638	21.52	96	63
5-W-13	13600	5—5	2—6	71	12995	12537	24.21	104	63
5-W-14	14720	6—5	2—6	71	13800	13308	24.21	112	63
5-W-15	15840	6—5	2—6	71	14696	14176	26.90	120	63

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers, 2 square feet per gallon of tank capacity on water boilers, before selecting boiler size. Sufficient radiation must be installed for building requirements.

Ideal Water Tube Boilers



Made in sizes suitable for any kind of building.

A series of water-backed vertical tubes presents an unusually large area of flue surface which extracts every possible heat unit from the hot gases as they travel to the chimney.

Has correctly proportioned combustion chamber and grate area. All contact faces of doors and sections are machine ground to a smooth finish to prevent air infiltration.

Equipped with relief valve which conforms to A.S.M.E. standards.

Steam

No.	*Installed Radiation Sq. Ft.	† Lgth. In.	Inlets No.	Inlets Size In.	Outlets No.	Outlets Size In.	Chimney Size In.	Chimney Ht. Ft.	Approx. Ship. Wt., Lb.
SC-29-T-5	930	30	2	5	2	5	8x12	25	2593
SC-29-T-6	1200	36	2	5	2	5	12x12	25	2981
SC-29-T-7	1450	42	2	5	2	5	12x12	25	3367
SC-29-T-8	1680	48	2	5	2	5	12x16	30	3753
SC-29-T-9	1900	54	2	5	2	5	12x16	35	4149
SC-29-T-10	2130	60	2	5	2	5	12x16	40	4534
SC-29-T-11	2370	66	2	5	2	5	16x16	45	4900
SC-29-T-12	2600	72	2	5	2	5	16x16	45	5283
SC-36-T-6	1900	36	2	4	2	6	12x16	25	4022
SC-36-T-7	2350	42	2	4	2	6	16x16	30	4563
SC-36-T-8	2800	48	2	4	2	6	16x16	35	5115
SC-36-T-9	3250	54	2	4	2	6	16x20	40	5666
SC-36-T-10	3700	60	2	4	2	6	16x20	50	6210
SC-36-T-11	4150	66	2	4	2	6	16x20	55	6766
SC-36-T-12	4600	72	2	4	2	6	20x20	60	7296
Water									
WC-29-T-5	1490	30	2	5	2	5	8x12	25	2586
WC-29-T-6	1920	36	2	5	2	5	12x12	25	2974
WC-29-T-7	2320	42	2	5	2	5	12x12	25	3360
WC-29-T-8	2690	48	2	5	2	5	12x16	30	3746
WC-29-T-9	3040	54	2	5	2	5	12x16	35	4140
WC-29-T-10	3410	60	2	5	2	5	12x16	40	4525
WC-29-T-11	3790	66	2	5	2	5	16x16	45	4891
WC-29-T-12	4160	72	2	5	2	5	16x16	45	5274
WC-36-T-6	3040	36	2	4	2	6	12x16	25	4011
WC-36-T-7	3760	42	‡2	3½	2	6	16x16	30	4550
WC-36-T-8	4480	48	‡2	3½	2	6	16x16	35	5101
WC-36-T-9	5200	54	‡2	3½	2	6	16x20	40	5652
WC-36-T-10	5920	60	‡2	3½	2	6	16x20	50	6196
WC-36-T-11	6640	66	‡2	3½	2	6	16x20	55	6750
WC-36-T-12	7360	72	‡4	3½	2	6	20x20	60	7278

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers, 2 square feet per gallon of tank capacity on water boilers, before selecting boiler size. Sufficient radiation must be installed for the requirements of the building.

*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pickup loads.

†Exclusive of smoke hood.

‡These sizes have two 4-inch inlets in addition to those listed.

Ideal Water Tube Boilers

Oil Burning

American Radiator & Standard Sanitary Corporation

An extensive series of carefully designed, water-backed vertical tubes assures proper water circulation and exposes an unusually large amount of heat-absorbing surface to the hot gases.

Correctly proportioned flues and a flue travel twice the boiler's length absorb every possible heat unit from the flue gases.

Large combustion chamber provides adequate space for complete burning of atomized oil.

Special oil burner installing plate, designed to insure neat, workmanlike installation, is supplied.

Steam

No.	*Installed Radiation Sq. Ft.	‡Lgth. In.	Inlets No.	Inlets Size In.	Outlets No.	Outlets Size In.	Chimney Size In.	Chimney Ht. Ft.	Approx. Ship. Wt., Lb.
S-0629	1200	36	2	5	2	5	12x12	25	2885
S-0729	1450	42	2	5	2	5	12x12	25	3243
S-0829	1680	48	2	5	2	5	12x16	30	3601
S-0929	1900	54	2	5	2	5	12x16	35	3995
S-1029	2130	60	2	5	2	5	12x16	40	4380
†S-1129	2370	66	2	5	2	5	16x16	45	4770
S-0736	2350	42	2	4	2	6	16x16	30	4495
S-0836	2800	48	2	4	2	6	16x16	35	5044
S-0936	3250	54	2	4	2	6	16x20	40	5567
S-1036	3700	60	2	4	2	6	16x20	50	6106
S-1136	4150	66	2	4	2	6	16x20	55	6658
S-1236	4600	72	2	4	2	6	20x20	60	7216
Water									
W-0629	1920	36	2	5	2	5	12x12	25	2879
W-0729	2320	42	2	5	2	5	12x12	25	3236
W-0829	2690	48	2	5	2	5	12x16	30	3594
W-0929	3040	54	2	5	2	5	12x16	35	3986
W-1029	3410	60	2	5	2	5	12x16	40	4371
†W-1129	3790	66	2	5	2	5	16x16	45	4761
W-0736	3760	42	§2	3½	2	6	16x16	30	4482
W-0836	4480	48	§2	3½	2	6	16x16	35	5030
W-0936	5200	54	§2	3½	2	6	16x20	40	5553
W-1036	5920	60	§2	3½	2	6	16x20	50	6092
W-1136	6640	66	§2	3½	2	6	16x20	55	6642
W-1236	7360	72	§4	3½	2	6	20x20	60	7198

Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads.

†Oil or stoker fired only.

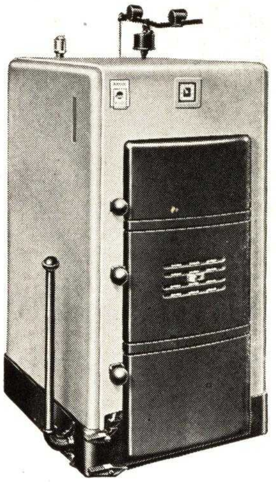
‡Exclusive of smoke collar.

§Also furnished in the No. 2, 4-inch size.

When domestic hot water supply heaters are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers, 2 square feet per gallon of tank capacity on water boilers, before selecting boiler size. Sufficient radiation must be installed for the requirements of the building.

Severn Boilers

Hand, Stoker Fired Coal, or Oil



Internal construction of this boiler is scientifically correct and properly balanced to assure more than average heating power, quick heat-making and low operating cost. Unique refinements and improvements are included for extra convenience and labor-saving. Because of special care and ingenuity in designing, this boiler is adapted for hand firing and automatic firing with oil, gas or stoker. Highly efficient performance with any good burner or stoker can be expected. Oil burners may be installed in front or rear, and, due to special openings provided, stokers can operate from front or either side.

Made for small to medium sized homes.

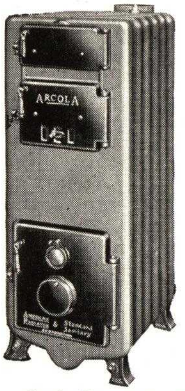
Boiler has a thick layer of air cell asbestos insulation between the jacket and boiler. This effectively prevents heat loss, saves fuel and helps to keep jacket cool.

Jacket finished in canyon red and doors are streamlined.

When specified coal boilers can be equipped with a built-in Tank Type Water Heater at small extra cost, which will supply abundant hot water for domestic use while heating system is in operation. Oil models can have either Tank Type or Tankless Type built-in heaters for supplying all year-round hot water.

Arcola Hot Water Boilers

For Coal or Oil



Designed especially for small homes and buildings, with or without a basement.

Well-proportioned flues, adequate heating surface, ample waterways and large fuel capacity assure economical fuel burning and rapid circulation of heat.

Automatic heat regulator, at extra cost, controls the fire and helps maintain desired temperature.

All contacting surfaces of doors and sections are ground to smooth finish to prevent dust and air leakage.

Boilers have 1 inlet, 2½-in. I.P.S., and 2 outlets, 2-in. I.P.S

Coal—Hand Fired				Oil Burning						
No.	*Installed Rad. Sq. Ft.	Radiating Surface Sq. Ft.	Approx. Ship. Wt. Lb.	No.	*Installed Rad. Sq. Ft.	Radiating Surface Sq. Ft.	Approx. Ship. Wt. Lb.	Lgth. In.	Ht. In.	Width In.
4-A	120	45	438	....	..	..	..	12	44⅛	17
5-A	170	50	501	5-A-Oil	150	50	463	15	44⅛	17
6-A	220	55	571	6-A-Oil	200	55	524	18	44⅛	17
7-A	270	60	640	7-A-Oil	250	60	587	21	44⅛	17
8-A	320	65	706	8-A-Oil	300	65	649	24	44⅛	17
9-A	370	70	778	9-A-Oil	350	70	711	27	44⅛	17
10-A	420	75	845	10-A-Oil	400	75	763	30	44⅛	17

*Boiler ratings based on net installed radiation (150 Btu. for hot water). Allowances have been made in ratings for normal piping (covered) and pickup loads. Sufficient radiation must be installed for requirements of the building.

On hand-fired boilers, allowance has been provided in ratings for normal domestic hot water supply.

On automatically-fired boilers when domestic hot water supply is installed, add two square feet per gallon of tank capacity to installed radiation before selecting boiler size.

Prices upon Request

Severn Boilers

Hand, Oil, Gas or Stoker Fired
Specifications and Dimensions

*Hand-Fired

Steam			Water			No. & Size Tappings Inches	
No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Flow	Return
S–17	350	1222	W–17	560	1213	1–3,1–4	2–3
S–21	450	1396	W–21	720	1387	1–3,1–4	2–3
S–25	550	1494	W–25	880	1485	1–3,1–4	2–3
S–29	630	1666	W–29	1010	1657	1–3,1–4	2–3
S–33	710	1782	W–33	1140	1773	1–3,1–4	2–3
S–37	780	1926	W–37	1250	1917	1–3,2–4	2–3

†‡Oil-Fired

Steam			Water			No. & Size Tappings Inches	
No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Flow	Return
S–17–0	400	1037	W–17–0	640	1033	1–3,1–4	2–3
S–21–0	460	1194	W–21–0	740	1190	1–3,1–4	2–3
S–25–0	520	1271	W-25–0	830	1267	1–3,1–4	2–3
S–29–0	600	1411	W–29–0	960	1407	1–3,1–4	2–3
S–33–0	690	1514	W–33–0	1100	1510	1–3,1–4	2–3
S–37–0	780	1639	W–37–0	1250	1635	1–3,2–4	2–3

†Stoker-Fired

Steam			Water			No. & Size Tappings Inches	
No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Flow	Return
SC–17	400	1037	WC–17	640	1033	1–3,1–4	2–3
SC–21	460	1198	WC–21	740	1194	1–3,1–4	2–3
SC–25	520	1280	WC–25	830	1276	1–3,1–4	2–3
SC–29	600	1437	WC–29	960	1433	1–3,1–4	2–3
SC–33	690	1529	WC–33	1100	1525	1–3,1–4	2–3
SC–37	780	1660	WC–37	1250	1656	1–3,2–4	2–3

†‡Oil-Burning Unit

Steam			Water				No. & Size Tappings Inches	
No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	No.	Installed Rad. Sq. Ft.	Approx. Ship. Wt. Lb.	Recom. Nozzle Size GPH.	Flow	Return
S–17–OB	400	1262	W-17–OB	640	1262	1.5	1–3,1–4	2–3
S–21–OB	460	1433	W–21–OB	740	1433	1.75	1–3,1–4	2–3
S–25–OB	520	1512	W–25–OB	830	1512	2.0	1–3,1–4	2–3
S–29–OB	600	1652	W–29–OB	960	1652	2.25	1–3,1–4	2–3
S–33–OB	690	1757	W–33–OB	1100	1757	2.50	1–3,1–4	2–3
S–37–OB	780	1882	W–37–OB	1250	1882	2.75	1–3,2–4	2–3

*Can be furnished with No. 702 Biltin Taco Heater of 40 gallons capacity or No. 703 Biltin Taco Heater of 100 gallons capacity. Biltin Taco Heater capacities based upon minimum water temperature of 212°F.

‡Furnished with flush jacket only.

†Available with No. 703 Biltin Taco Heater which has a capacity of 66 gallons based upon minimum boiler water temperature of 180°F. and permits installation of the Taco-Abbott System for year-round hot water supply. Can also be furnished with No. 590 Biltin Taco Tankless Heater which has a capacity of 210 gallons based upon minimum boiler water temperature of 180°F. and permits installation of Taco-Abbott system for year-round hot water supply.

Ratings

Boiler ratings are based on net installed radiation, (240 Btu. per square foot for steam and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads.

Allowances have also been provided in ratings for normal domestic hot water supply.

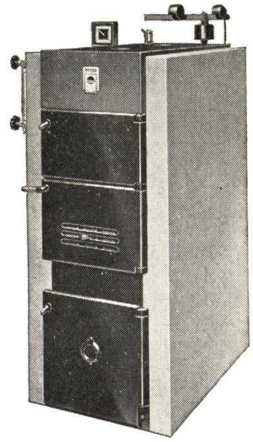
Oil and Stoker Fired.—When domestic hot water supply heaters (either external or Biltin type) are installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers and 2 square feet per gallon of tank capacity on water boilers before selecting boiler size.

When Biltin Tankless Heater is installed, add 50 square feet steam radiation per bathroom or 80 square feet water radiation per bathroom to installed radiation before selecting boiler size. Tankless type water heater is not recommended for use in localities where there is an excessive amount of lime in the water, except where provision is made for regularly cleaning heater. Use of storage tank containing integral heating unit is recommended in hard water areas.

Arcoliner Boilers

For All Fuels—Automatic or Hand Fired

Jacketed



An efficient, economical boiler for small homes. Effective heating surfaces are correctly proportioned for maximum heat absorption.

Combustion chamber scientifically designed for complete, economical burning of any fuel. Has two-pass finned flue surfaces. Large steam space assures dry steam for quick, noiseless heating.

Sturdily built grates; and tight joints. Extra large nipple connections at top assure balanced internal circulation.

Boiler jacket extends to floor. Thoroughly insulated to prevent heat loss and to keep jacket cool. Finished in two-tone red. Built-in water heater available for domestic hot water, at slight extra cost.

Boiler sections are shipped assembled.

Further Information and Prices on Request

Arcoliner Boilers

Dimensions

Floor to Top	inches	51⅝
Floor to Water Line (Steam Boiler)	inches	44⅜
Floor to Center Line of Smoke Pipe	inches	38⅝
Floor to Ctr. of Water Heater Tapping	inches	33⅛
Floor to Crown of Boiler	inches	32½
Floor to Grate Line	inches	9¾
Width Overall	inches	21⅞
Width of Grates	inches	13⅞
Width of Firebox	inches	15

Coal Ratings—Hand Fired

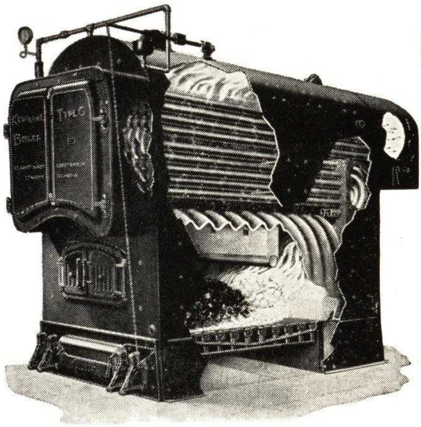
Boiler No.		*Installed Radiation Sq. Ft.		Chimney		No. and Size Tappings, In.	
Steam	Water	Steam	Water	Size In.	Ht. Ft.	Flow	Return
S-153-D	W-153-D	180	290	8x 8	20	1–3	1–3
S-154-D	W-154-D	270	430	8x 8	25	1–3	1–3
S-155-D	W-155-D	370	590	8x 8	30	2–3	1–3
S-156-D	W-156-D	460	740	8x12	35	2–3	1–3
Oil Ratings—Automatic Fired							
S-153-DO	W-153-DO	230	370	8x 8	20	1–3	1–3
S-154-DO	W-154-DO	300	480	8x 8	20	1–3	1–3
S-155-DO	W-155-DO	370	590	8x 8	20	2–3	1–3
S-156-DO	W-156-DO	440	705	8x12	30	2–3	1–3
Stoker Ratings—Automatic Fired							
S-CD-154	W-CD-154	300	480	8x 8	20	1–3	1–3
S-CD-155	W-CD-155	370	590	8x 8	20	2–3	1–3
S-CD-156	W-CD-156	440	705	8x 8	25	2–3	1–3

*Boiler ratings are based on net installed radiation (240 Btu. per square foot for steam, and 150 Btu. per square foot for hot water). Allowances have been made in the ratings for normal piping (covered) and pick-up loads. Sufficient radiation must be installed for the requirements of the building.

When domestic hot water supply heater is installed, add 1 square foot per gallon of tank capacity to installed radiation on steam boilers and 2 square feet per gallon of tank capacity on water boilers before selecting boiler size.

Type C Kewanee Welded Steel Boilers

Low Pressure



A welded compact boiler with its corrugated crown sheet that has great strength and adds more heating surface where most effective use may be made of intense heat for quick steaming.

Conforms to the A. S. M. E. boiler construction code for 15 pounds.

With 3-inch tubes.

Rating is total radiation load at boiler outlet, expressed in equivalent surface of cast iron radiators, emitting 240 Btu. per square foot per hour for steam at 2 pounds pressure or 150 Btu. for water at 180°.

For Coal

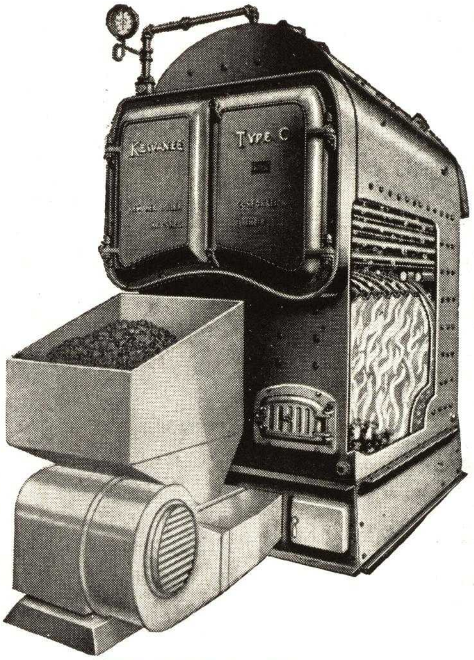
Nos. 774 to 790 with smokeless arch and drum are for use with high volatile bituminous coal.

Nos. 2773 to 2790 without arch are direct draft for use with smokeless fuels such as low-volatile bituminous coal, coke or anthracite.

No.		Rating, Sq. Ft.		Ship. Wt. Pounds	
With Arch	Without Arch	Steam Radiation	Water Radiation	Series 700	Series 2700
...	2773	2200	3520	....	3400
774	2774	2600	4160	3900	3800
775	2775	3000	4800	4400	4300
776	2776	3500	5600	5000	4800
777	2777	4000	6400	5500	5300
778	2778	4500	7200	6000	5800
779	2779	5000	8000	6500	6300
780	2780	6000	9600	7500	7200
781	2781	7000	11200	8400	8100
782	2782	8500	13600	9700	9400
783	2783	10000	16000	11000	10600
784	2784	12500	20000	12900	12500
785	2785	15000	24000	14900	14400
786	2786	17500	28000	16600	16100
787	2787	20000	32000	18400	17900
788	2788	25000	40000	22000	21200
789	2789	30000	48000	25200	24400
790	2790	35000	56000	28400	27500

For Oil, Gas, or Stoker

No.		Rating, Sq. Ft.			No.		Rating, Sq. Ft.		
Oil or Gas	Stoker	Steam Radiation	Water Radiation	Ship. Wt. Lb.	Oil or Gas	Stoker	Steam Radiation	Water Radiation	Ship. Wt. Lb.
1773	0773	2680	4280	2900	1782	0782	10330	16520	8000
1774	0774	3160	5050	3300	1783	0783	12150	19440	9100
1775	0775	3650	5840	3700	1784	0784	15180	24280	10700
1776	0776	4250	6800	4100	1785	0785	18220	29150	12300
1777	0777	4860	7770	4600	1786	0786	21250	34000	13800
1778	0778	5470	8750	5000	1787	0787	24290	38860	15400
1779	0779	6080	9720	5400	1788	0788	30360	48570	18100
1780	0780	7290	11660	6100	1789	0789	36430	58280	20900
1781	0781	8500	13600	6900	1790	0790	42500	68000	23400


Boiler with Stoker Attachment

Type C Kewanee Hi-Firebox Steel Welded Boilers

For Oil, Gas, or Stoker

Series 7L70

A boiler built exactly right for stokers. Has long water legs providing the necessary height in firebox to comply with S.H.B.I. code for stoker firing.

High operating efficiency insures life-long economy with any oil, gas, or stoker equipment.

Conforms to A.S.M.E. boiler construction code for 15 pounds, and for rating with the industry standard practice approved by the Steel Boiler Institute in cooperation with U. S. Department of Commerce Recommendation R 157.

Crown sheet is strengthened by corrugations. In the process of corrugating crown sheets not even a slight reduction in metal thickness is discernible by micrometer measurements.

Manhole is furnished on boilers No. 7L82 and larger.

Equipment: Steel base assembled with four cast iron corner posts, heavy steel flanged panels have 8½x11½ front and rear opening; insulated flue door; and flue cleaner and handle. May be fitted with hot water heating coils at extra cost.

Trimmings for steam only: Safety valve, steam gauge with syphon and cock; water column with water gauge, glass and cocks. All front smokeboxes have double doors.

*Average firebox height, computed by dividing the firebox volume by the plan area, complies with S.H.B.I. code when stoker dead plates are located at top of mud ring.

†Front smokebox and front head below smokebox is included.

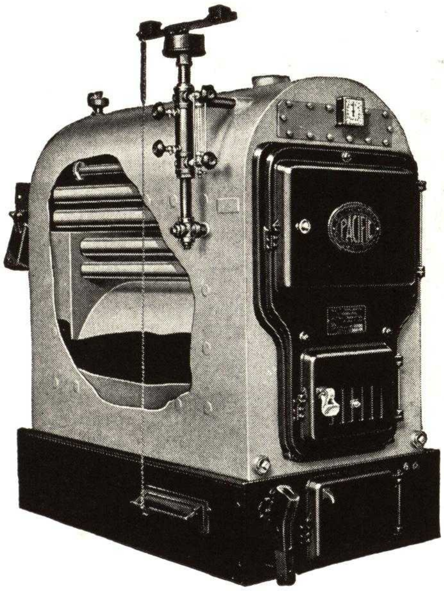
Series 27L70

27L70 series boilers have hand-fired coal grates and ratings and chimney heights with 7L70 dimensions.

No.	7L73	7L74	7L75	7L76	7L77	7L78	7L79	7L80	7L81	7L82	7L83	7L84	7L85	7L86	7L87	7L88	7L89	7L90
Rating:																		
Steam Radiation.....sq. ft.	2680	3160	3650	4250	4860	5470	6080	7290	8500	10330	12150	15180	18220	21250	24290	30360	36430	42500
Water Radiation.....sq. ft.	4280	5050	5840	6800	7770	8750	9720	11660	13600	16520	19440	24280	29150	34000	38860	48570	58280	68000
Btu. per Hour.......1000's	643	758	876	1020	1166	1313	1459	1750	2040	2479	2916	3643	4373	5100	5830	7286	8743	10200
Heating Surface (S.H.B.I. Min.)..............sq. ft.	158	186	215	250	286	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500
Furnace Volume (S.H.B.I. Min.)..............cu. ft.	19.2	22.6	26.1	30.4	34.8	39.1	43.5	52.1	60.8	73.8	86.8	108.5	130.2	151.8	173.5	216.9	260.3	303.6
*Average Firebox Ht......in.	33.9	33.0	32.3	31.4	34.5	34.0	34.0	37.8	37.2	42.7	42.4	46.5	48.5	52.4	54.7	58.2	63.5	66.8
Firebox Vol. above Mud Ring ....cu. ft.	25.5	28.3	31.1	36.1	45.8	50.8	56.0	73.5	85.2	100.5	117.4	145.4	184.5	203.7	243.4	321.6	357.2	437.0
Plan Area............sq. ft.	9.1	10.3	11.5	13.8	15.9	17.9	19.8	23.4	27.5	28.2	33.3	37.5	45.7	46.7	53.4	66.3	67.5	78.5
Breeching Diameter....inches	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
Stack Diameter........inches	15	16	16	17	18	19	20	21	22	24	26	28	29	31	33	36	38	40
Stack Height, Stoker Fired ....feet	35	35	40	45	40	45	50	50	60	55	65	65	70	65	75	90	80	100
Breeching Diameter, Two Boilers.............inches	23	24	24	25	26	27	28	30	31	34	36	40	41	44	47	50	54	56
Stack Diameter, Two Boilers ....inches	21	22	22	23	24	25	26	28	29	32	34	37	38	41	44	47	50	52
Stack Height, Two Boilers Stokered.............feet	45	45	50	55	50	55	60	60	70	65	75	75	80	75	85	100	90	110
Steam Supply Size......inches	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10
Return Size............inches	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	6	6	6
Water Heater Connection Size ....inches	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Safety Valve Size.......inches	1½	2	2	2	2	2	2½	2½	2½	3	3	2–2	2–2½	2–2½	2–2½	2–2½	2–3	2–3
Boiler Width..........inches	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
Boiler Length.........ft., in.	4–2	4–8	5–2	6–0½	5–10½	6–6½	7–2	7–2½	8–5	7–8	8–11½	9–2½	9–11½	9–3½	10–6½	11–11½	11–4½	13–1½
Boiler Length Overall..ft., in.	5–10½	6–4½	6–10½	7–9	7–10½	8–6½	9–2	9–4½	10–7	9–11	11–2½	11–6½	12–3½	12–1½	13–4½	14–9½	14–2½	15–11½
Boiler Ht. Overall......inches	82½	82½	82½	82½	88½	88½	88½	94½	94½	108	108	119½	123	131	134	140	157	161
Water Line Height.....inches	74	74	74	74	77	77	77	81	81	94	94	105	106	114	117	121	136	140
Return Height.........inches	18	18	18	18	18	18	18	18	18	18	18	21	21	21	21	22	26	26
Firebox Width.........inches	30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
Firebox Length........inches	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
Firebox Height.........inches	31	31	31	31	34	34	34	38	38	43	43	47	49	53	56	60	64	68
Base Width............inches	41½	41½	41½	41½	47½	47½	47½	53½	53½	59½	59½	66	72	78	78	84	90½	90½
Base Length...........inches	52	58	64	74½	72½	80½	88	88½	103	94	109½	113	122	114	129	146	139	160
Base Height...........inches	14	14	14	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21
Smoke Outlet Diam....inches	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
Firedoor Height........inches	13½	13½	13½	13½	13½	13½	13½	11	11	11	11	12	12	12	12	15	15	15
Firedoor Width........inches	27½	27½	27½	27½	27½	27½	27½	16	16	16	16	20	20	20	20	23	23	23
Space Bet. Firedoors....inches	.....	.....	.....	.....	.....	.....	.....	7	7	12	12	9	15	20	20	20	26	26
Height Doors from Bottom Boiler..............inches	9½	9½	9½	9½	8½	8½	8½	8	8	8	8	8	8	8	8	10	10	10
†Outside Surf. to Cover.sq. ft.	79	85	93	104	116	125	134	152	170	192	215	245	277	291	327	385	415	463
Ship. Wt. Stoker Fired.....lbs.	3100	3500	3900	4400	4900	5400	5800	6700	7600	8800	10000	11800	13600	15300	17000	20100	23200	26100

Pacific Coal Burning Steel Boilers

For Residences and Small Apartments



Built of steel with all joints welded. Leak-proof without caulking. Green baked enamel finish jacket.

When equipped with built-in hot water coils boiler provides an ample supply of hot water for domestic use.

Incorporates all the details of construction used in the larger types of Pacific Boilers.

Designed with oversize firebox, extending the full length of the shell, providing ample combustion space.

Saves fuel, by using combustion gases.

Surrounding the fuel bed and combustion chamber is a water leg formed by the firebox. This direct contact with the radiant heat of the burning fuel means greater heat absorption and greater fuel economy.

Longer fire travel permits the hot gases of combustion to distribute their heat to the water surrounding the tubes with a minimum of waste.

Permanently insulated against heat loss by a thick blanket of rock wool. Reinforced by steel mesh wire. Impervious to moisture, fireproof, termite-proof and practically indestructible.

Construction Features

Hot water heating coil access panel is readily accessible on the front of the boiler. Permits quick removal of heater coil.

Large flue doors with heavy liners to reduce heat loss. Tubes can be cleaned even with boiler in operation.

Full three-inch tubes. Ample size to carry off the products of combustion from all kinds and all grades of coal.

Damper regulator. Chain and control is located on side.

Fire door has baffle plate to prevent overheating or warping. Ash pit door is full size for easy handling.

Smoke box can be easily removed to facilitate re-rolling or replacing tubes. Soot is removed through a convenient opening in smoke hood.

Hot water coil terminals located at rear of boiler.

Extra heavy cast iron grates, designed to burn any type of coal. Easy to operate and keep clean.

Trimmings for water; combination thermometer and altitude gauge, damper regulator.

Trimmings for steam: steam gauge, safety valve; water gauge glass with nickel plated trimmings and try-cocks; damper regulator.

Equipment for hand firing: base with ash door, grates, shaking equipment, and draft door. Poker and tube cleaner. Furnace and flue doors with frames. Tank type hot water coil rated at 65 gallons, 100°F. 3 hours with boiler steaming. A larger tank type heater rated at 95 gallons, 110°F. 3 hours with boiler steaming, or an instant type heater rated at 170 gallons, 100°F. per hour with boiler at 180°, or 220 gallons, 100°F. per hour with boiler steaming, can be furnished on order at extra cost.

Firing tools: poker, slice bar and tube cleaner with handle.

Residential Boilers

	*S.H.B.I. Ratings		Tank Type Water Heater Ratings Gal. 3 Hours 100°F.		Instant Type Water Heater Ratings Gal. 1 Hour 100°F.				Minimum Size of Stack In.								Shipping Weight Pounds	
No.	Steam	Water	With Boiler Steaming	With Boiler Water 180°F.	With Boiler Steaming	With Boiler Water 180°F.	Height Water Line Inches	Height to Center Line Smoke Conn. Inches	Round	Rectangular	Stack Height Feet	Grate Area Sq. Ft.	Heating Surface Sq. Ft.	Outside Surface to Cover Unjacketed Sq. Ft.	Size Outlet Inches	Size Return Inches	Without Jacket	With Jacket
23A2	825	1320	100	65	175	135	53	43	12	12x12	35	5.0	59	43	3	3	1600	1930
23B2	1060	1700	100	65	175	135	53	43	12	12x12	35	5.9	76	48	3	3	1800	2165
27A2	1360	2180	150	100	200	150	55	44	14	12x16	40	6.9	97	52	4	4	2050	2420
27B2	1550	2480	150	100	225	175	55	44	14	12x16	40	8.0	111	57	4	4	2275	2690
27C2	1720	2750	200	135	225	175	55	44	14	12x16	45	8.0	123	63	4	4	2500	2950
27D2	1880	3000	200	135	250	200	55	44	14	12x16	45	9.1	134	68	4	4	2725	3210
27E2	2100	3360	200	135	250	200	55	44	14	12x16	50	9.1	150	73	4	4	2950	3470

No.		**23A2**	**23B2**	**27A2**	**27B2**	**27C2**	**27D2**	**27E2**
Length	inches	$38\frac{3}{4}$	$44\frac{3}{4}$	$44\frac{3}{4}$	$50\frac{3}{4}$	$56\frac{3}{4}$	$62\frac{3}{4}$	$68\frac{3}{4}$
Length of Firebox	inches	31	37	37	43	49	55	61
Height	inches	$62\frac{3}{8}$	$62\frac{3}{8}$	$64\frac{3}{8}$	$64\frac{3}{8}$	$64\frac{3}{8}$	$64\frac{3}{8}$	$64\frac{3}{8}$
Length of Base	inches	$39\frac{1}{4}$	$45\frac{1}{4}$	$45\frac{1}{4}$	$51\frac{1}{4}$	$57\frac{1}{4}$	$63\frac{1}{4}$	$69\frac{1}{4}$
Width of Base	inches	$31\frac{1}{2}$	$31\frac{1}{2}$	$35\frac{1}{4}$	$35\frac{1}{4}$	$35\frac{1}{4}$	$35\frac{1}{4}$	$35\frac{1}{4}$
Height of Base	inches	12	12	12	12	12	12	12
Center of Returns to Boiler Center Line	inches	$11\frac{5}{16}$	$11\frac{5}{16}$	$12\frac{3}{4}$	$12\frac{3}{4}$	$12\frac{3}{4}$	$12\frac{3}{4}$	$12\frac{3}{4}$
Center of Returns to Floor	inches	$14\frac{5}{8}$	$14\frac{5}{8}$	$15\frac{1}{8}$	$15\frac{1}{8}$	$15\frac{1}{8}$	$15\frac{1}{8}$	$15\frac{1}{8}$
Height of Water Line	inches	53	53	55	55	55	55	55
Diameter of Smoke Outlet	inches	12	12	14	14	14	14	14
Floor to Center Line Smoke Outlet	inches	43	43	44	44	44	44	44
Length of Ash Pit	inches	$33\frac{1}{4}$	$39\frac{1}{4}$	$39\frac{1}{4}$	$45\frac{1}{4}$	$51\frac{1}{4}$	$57\frac{1}{4}$	$63\frac{1}{4}$
Width of Ash Pit	inches	$25\frac{1}{2}$	$25\frac{1}{2}$	$29\frac{1}{4}$	$29\frac{1}{4}$	$29\frac{1}{4}$	$29\frac{1}{4}$	$29\frac{1}{4}$
Firebox Height	inches	20	20	$21\frac{1}{2}$	$21\frac{1}{2}$	$21\frac{1}{2}$	$21\frac{1}{2}$	$21\frac{1}{2}$
Firebox Width	inches	$22\frac{7}{8}$	$22\frac{7}{8}$	$26\frac{3}{4}$	$26\frac{3}{4}$	$26\frac{3}{4}$	$26\frac{3}{4}$	$26\frac{3}{4}$
Width Overall Bare Boiler	inches	29	29	$32\frac{7}{8}$	$32\frac{7}{8}$	$32\frac{7}{8}$	$32\frac{7}{8}$	$32\frac{7}{8}$

Water heaters furnished only on order at extra cost.

*Above ratings do not include allowance for heating domestic hot water.

Pacific High Firebox Boilers

For Mechanical Firing

Built entirely of steel, electrically welded with two-piece construction. Leak-proof without caulking; will withstand severe strains of contraction and expansion.

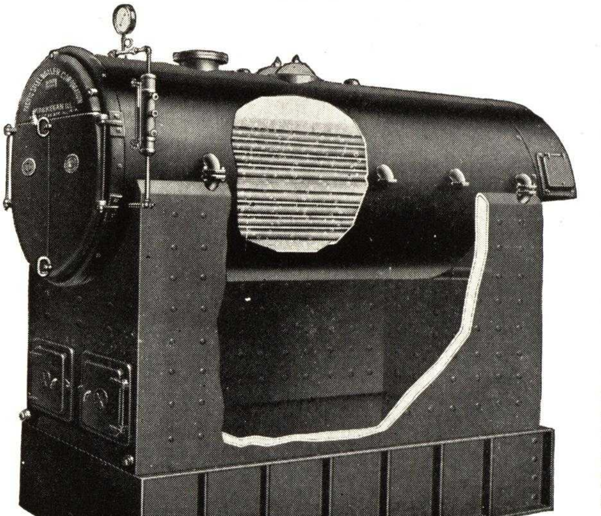
Boilers are built, inspected and tested under supervision of the Hartford Steam Boiler Inspection and Insurance Company.

Sides and back of firebox form a water leg extending entire length of shell. Firebox design assures best possible combustion with any kind of fuel or firing.

The design restricts the passage of water between the firebox and the shell, creating forced circulation that sweeps the tube and shell heating surfaces free of steam bubbles. This results in maximum heat absorption.

Furnished with steel bases or with steel supporting angles, welded to the bottom of the fire box, and steel bearing plates, for erection on brick settings.

A.S.M.E. Standards are used as minimums.



Shell and firebox, flange quality steel plate. Steam trimmings consist of steam gauge with siphon and cock, water column with trimmings, and safety valve. Firing tools, steel tube cleaner. Smoke connection, horizontal at rear of shell. Maximum working pressures: steam, 15 pounds; water, 30 pounds.

Firebox heights equal or exceed the Stoker Manufacturers Association requirements and meet the requirements of most city smoke ordinances.

High firebox boilers sizes 29S2 to 33S4 have double type fire doors 14x28 inches, total opening. Sizes 40S1 to 47S2 have two 12x18-inch fire doors. Sizes 52S1 and larger have two 14x20-inch fire doors. All boilers have high steel bases with bolted cleanouts and with angle frame fronts having full size removable cover plates adapted for easy stoker installation. Top flanges of bases are extended on sides and rear and punched for covering support.

No.	S.H.B.I. Steam Rating Sq. Ft.	Outside Surface To Cover Sq. Ft.	Height Water Line Inches	One-Boiler		Two-Boilers		Gross Base Vol. Cu. Ft.	Firebox Volume		Heating Surface Sq. Ft.	Size Outlet Inches	Size Return Inches	Approx. Shipping Weight Lb.
				Diam. Stack Inches	Height Stack Feet	Diam. Stack Inches	Height Stack Feet		Above Base Cu. Ft.	S.H.B.I. Min. Cu. Ft.				
29S2	2680	79	74	15	35	20	45	16	29	19.2	158	6	3	3100
29S3	3160	90	74	16	35	22	45	19	34	22.6	186	6	3	3500
29S4	3650	101	74	16	40	22	50	22	39	26.1	215	6	3	3850
33S1	4250	85	81½	17	45	23	55	21	39	30.4	250	6	3	4200
33S2	4860	98	84½	18	45	24	55	24	49	34.8	286	6	3	4550
33S3	5470	108	84½	19	45	26	55	28	55	39.1	322	6	3	5100
33S4	6080	118	86½	20	50	27	60	33	60	43.5	358	6	3	5250
40S1	7290	139	87½	21	50	28	60	43	89	52.1	429	8	4	6100
47S1	8500	130	93	22	50	29	60	42	89	60.8	500	8	4	6750
47S2	10330	160	98	24	60	32	70	50	118	73.8	608	8	4	7850
52S1	12150	180	104	26	55	35	65	61	133	86.8	715	8	4	9000
52S2	15180	224	108	28	65	37	75	75	177	108.5	893	8	4	10750
60S1	18220	219	118½	29	65	39	75	84	191	130.2	1072	8	4	12350
60S2	21250	263	122½	31	70	41	80	97	235	151.8	1250	8	4	13850
67S1	24290	280	129	33	70	44	80	105	273	173.5	1429	8	4	16350
67S2	30360	350	133	36	85	48	95	129	355	216.9	1786	10	6	18900
75S1	36430	352	144½	38	80	51	90	134	403	260.3	2143	10	6	22400
75S2	42500	407	148½	40	100	53	110	156	490	303.6	2500	10	6	25000

No.	Length Over-all In.	Width Over-all In.	Height Boiler In.	Height Firebox Over-all In.	Length Base In.	Width Base In.	Height Base In.	Shell Over-Hang In.	Location Steam Supply In.	Height Water Line In.	Diam. Smoke Conn. In.	Height Center Smoke Conn. In.	Firebox Length In.	Firebox Width In.	Inside Base Width In.	Throat Height In.	S.H.B.I. Furnace Height In.
29S2	69½	39	86¾	50	52¼	39	18	11½	25	74	18	75¼	44½	29⅞	32	31	37.9
29S3	78½	39	86¾	50	60¼	39	18	12½	28	74	18	75¼	52½	29⅞	32	31	37.3
29S4	87½	39	86¾	50	69¼	39	18	12½	30	74	18	75¼	61½	29⅞	32	31	36.9
33S1	79½	43	95¾	53	58¼	43¾	18	14½	30	81½	22	81¼	50½	34¾	36¾	31	38.7
33S2	87½	43	98¾	56	66¼	43¾	18	14½	32	84½	22	84¼	58½	34¾	36¾	34	41.2
33S3	96½	43	98¾	56	75¼	43¾	18	14½	34	84½	22	84¼	67½	34¾	36¾	34	40.8
33S4	102½	43	100¾	56	81¼	43¾	20	14½	36	86½	22	86¼	73½	34¾	36¾	34	40.6
40S1	111½	50	102	58	90¼	50	20	14½	31	87½	22	87¼	82½	41	43	38	45.4
47S1	99½	57½	109¼	60	76¼	57	20	14½	29	93	26	91¾	68½	48	50	38	46.9
47S2	113½	57½	114¼	65	90¼	57	20	14½	31	98	26	96¾	82½	48	50	43	51.2
52S1	115½	62½	121¼	68	90¼	62	22	14½	31	104	28	102¼	82½	52⅞	55	43	52.4
52S2	136½	62½	125¼	72	111¼	62	22	14½	30	108	28	106¼	103½	52⅞	55	47	55.7
60S1	127	70½	137¼	77	99¼	69¾	24	16½	31	118½	34	116¼	91½	60¾	62¾	49	59.1
60S2	142	70½	141¼	81	114¼	69¾	24	16½	33	122½	34	120¼	106½	60¾	62¾	53	62.8
67S1	140	77½	151¼	88½	111¼	77	24	16½	32	129	36	129	103½	68	70	56	67.1
67S2	164½	77½	155¼	92½	135¾	77	24	16½	32	133	36	133	128	68	70	60	70.4
75S1	157½	86½	167¼	100¾	127¼	85¼	24	16½	31	144½	40	143	119½	76¼	78¼	64	76.4
75S2	177	86½	171¼	104¾	146¾	85¼	24	16½	33	148½	40	147	139	76¼	78¼	68	79.8

Reznor Gas-Fired Suspended Unit Heaters

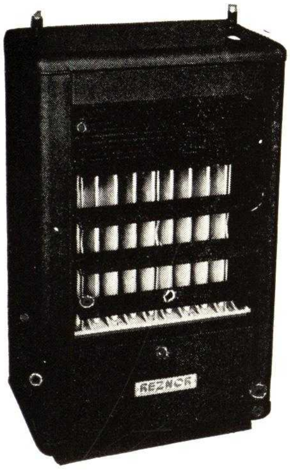
These Reznor Gas-Fired Suspended Unit Heaters are entirely self-contained, independent units which provide heat wherever it is most needed. In an efficient, reliable way they bring the advantages of automatic forced-air gas heating to an unlimited variety of domestic, commercial and industrial properties.

They are also ideal for auxiliary heating where the present plant cannot carry the load without wasteful forcing.

In space used intermittently, yet which should be kept from getting extremely cold, these heaters will maintain safely and dependably any desired temperature.

When the thermostat calls for heat, electric gas valve opens and sends gas to main burner. Burners are ignited by constant pilot. If pilot is extinguished, automatic shutoff shuts off entire gas supply. Uniform gas pressure is maintained by automatic regulator.

Propeller Fan Type Suspended Heaters



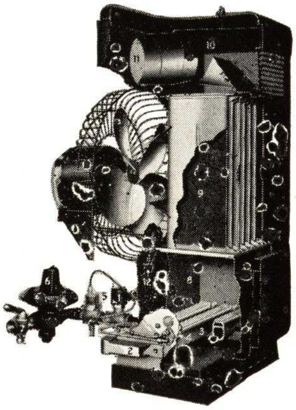
Fan type unit will most always be used when no ducts are to be connected to heater, except in rare cases where practically silent operation is demanded.

Motor is 1/50 to ⅛ hp., single phase, induction type. It is rubber mounted.

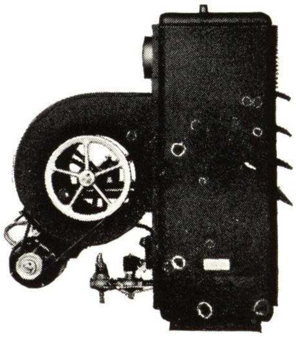
No.	Each	BTU. Input	Cap. CFM.	Speed RPM.	Fan Inches	Pitch Degrees
US55	**$121.50**	55,000	800	1000	14	18
US75	**139.50**	75,000	1350	1140	16	23
US90	**162.00**	90,000	1350	1140	16	23
US110	**182.25**	110,000	1700	1140	16	27
US130	**203.63**	130,000	1700	1140	16	27
US150	**225.00**	150,000	2000	1140	16	33
US200	**270.00**	200,000	2700	1140	18	33
US300	**450.00**	300,000	4000	1140	16(2)	33
US400	**540.00**	400,000	5400	1140	18(2)	33

Above prices for 110-volt, 60-cycle current. For 220-volt, 60-cycle add $2.00 net for fan type, $3.00 net for blower type and $1.00 net for duct type. Write for prices for other currents.

Where fan type units are to be used with short lengths of gravity sized ducts, heaters should be ordered with duct type sealing which is $2.00 extra for all sizes.



Blower Type Suspended Heaters

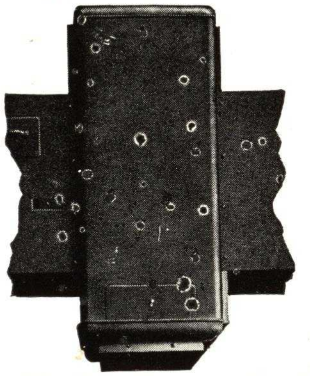


Reznor offers the blower type unit heater with the same capacities as its regular line fan unit heaters.

Fan unit heaters and blower unit heaters are identical in every respect and differ only in that on the one type a propeller fan furnishes the air-moving power while on the other a multi-blade or squirrel cage fan or blower is used.

No.	Each	BTU. Input	Capacity CFM. ¼-In. S.P.
SB55	**$166.50**	55,000	800
SB75	**182.25**	75,000	1350
SB110	**222.75**	110,000	1700
SB150	**283.50**	150,000	2000
SB200	**364.50**	200,000	2700

Duct Type Suspended Heaters



Duct heaters differ from the conventional fan type unit in that they are baffled and sealed to withstand the back pressures encountered in duct systems. Duct heaters are furnished with two rectangular openings in front and back to which the duct is attached.

Available in the same capacities and with the same controls, except motor and fan, as the standard fan unit heaters.

No.	Each	BTU. Input	Capacity CFM.
S55D	**$109.13**	55,000	800
S75D	**121.50**	75,000	1350
S110D	**157.50**	110,000	1700
S150D	**200.25**	150,000	2000
S200D	**243.00**	200,000	2700

Extras

Thermostats

No.	T42A	T44	176	855
Each	**$12.60**	**11.14**	**12.60**	**12.60**

No. SHB Floor Bases

No. SHB....................................each **$18.00**

No. MB Hanger Boards

No. MB....................................each **$6.15**

Louver Frames

No.	LF55	LF75	LF110	LF150	LF200
Each	**$9.00**	**10.00**	**10.00**	**11.25**	**11.25**

Low Limit Controls

For All Sizes and Types........................each **$6.15**

Vertical Air Louvers

No.	VL55	VL75	VL110	VL150	VL200
Each	**$2.00**	**$2.00**	**$2.00**	**$2.00**	**$2.00**
Per Set of 4	**7.85**	**7.85**	**7.85**	**7.85**	**7.85**

Return Air Boots

No.	RA55	RA75	RA110	RA150	RA200
Each	**$18.00**	**19.00**	**19.00**	**20.25**	**20.25**

Split Nozzles

No.	SN55	SN75	SN110	SN150	SN200
Each	**$20.25**	**21.25**	**21.25**	**22.50**	**22.50**

U. S. Capitol Thin Tube Radiators

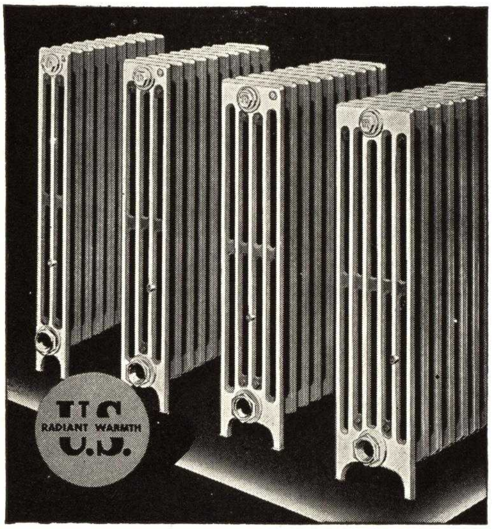
Furnished only in even number of sections and in lengths not exceeding 60 sections. Regularly furnished with legs measuring 2 1/2 inches from floor to center of bottom tappings. Can be furnished with 4 1/2-inch legs or legless on special order at no additional charge.

TAPPINGS: The 3, 4 and 5-tube are tapped 1-inch both ends at top and 1 1/4-inch both ends at bottom. The 6-tube is tapped 1 1/4-inch both ends at top and 1 1/2-inch both ends at bottom.

Add 1/2-inch to length for each bushing in estimating length of radiator.

To determine overall height of 3, 4 or 5-tube legless, deduct 1 3/8 inches from the standard heights. For 19-inch height 6-tube, deduct 1 3/16 inches and for 25 and 32-inch height 6-tube, deduct 1-inch from standard heights.

	3-Tube	4-Tube			5-Tube		6-Tube		
No.	**25–3**	**19–4**	**22–4**	**25–4**	**22–5**	**25–5**	**19–6**	**25–6**	**32–6**
Overall Height.......inches	25	19	22	25	22	25	19	25	32
C. to C. End Tappings.inches	21 5/16	15 5/16	18 5/16	21 5/16	18 5/16	21 5/16	15	21	28
Square Feet per Section....	1.6	1.6	1.8	2.0	2.1	2.4	2.3	3.0	3.7
Width...............inches	3 1/4	4 7/16	4 7/16	4 7/16	5 5/8	5 5/8	7 7/8	7 7/8	7 7/8
Square Feet per Lineal Inch	0.914	0.914	1.029	1.143	1.200	1.371	1.314	1.714	2.114



Heating Surface—Square Feet (1 3/4-Inch Centers)

Based upon Engineering Standard of 240 Btu. emission per sq. ft. per hr.

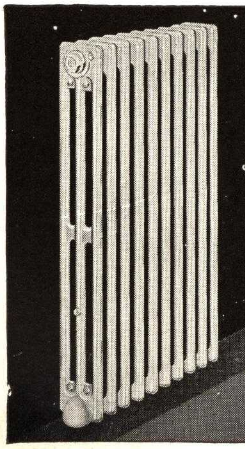
Number of Sections	Lgth. Inches 1 3/4-In. per Sections	3-Tube No. 25–3	4-Tube No. 19–4	No. 22–4	No. 25–4	5-Tube No. 22–5	No. 25–5	6-Tube No. 19–6	No. 25–6	No. 32–6
2	3 1/2	3.2	3.2	3.6	4	4.2	4.8	4.6	6	7.4
4	7	6.4	6.4	7.2	8	8.4	9.6	9.2	12	14.8
6	10 1/2	9.6	9.6	10.8	12	12.6	14.4	13.8	18	22.2
8	14	12.8	12.8	14.4	16	16.8	19.2	18.4	24	29.6
10	17 1/2	16.0	16.0	18.0	20	21.0	24.0	23.0	30	37.0
12	21	19.2	19.2	21.6	24	25.2	28.8	27.6	36	44.4
14	24 1/2	22.4	22.4	25.2	28	29.4	33.6	32.2	42	51.8
16	28	25.6	25.6	28.8	32	33.6	38.4	36.8	48	59.2
18	31 1/2	28.8	28.8	32.4	36	37.8	43.2	41.4	54	66.6
20	35	32.0	32.0	36.0	40	42.0	48.0	46.0	60	74.0
22	38 1/2	35.2	35.2	39.6	44	46.2	52.8	50.6	66	81.4
24	42	38.4	38.4	43.2	48	50.4	57.6	55.2	72	88.8
26	45 1/2	41.6	41.6	46.8	52	54.6	62.4	59.8	78	96.2
28	49	44.8	44.8	50.4	56	58.8	67.2	64.4	84	103.6
30	52 1/2	48.0	48.0	54.0	60	63.0	72.0	69.0	90	111.0
32	56	51.2	51.2	57.6	64	67.2	76.8	73.6	96	118.4
34	59 1/2	54.4	54.4	61.2	68	71.4	81.6	78.2	102	125.8
36	63	57.6	57.6	64.8	72	75.6	86.4	82.8	108	133.2
38	66 1/2	60.8	60.8	68.4	76	79.8	91.2	87.4	114	140.6
40	70	64.0	64.0	72.0	80	84.0	96.0	92.0	120	148.0
42	73 1/2	67.2	67.2	75.6	84	88.2	100.8	96.6	126	155.4
44	77	70.4	70.4	79.2	88	92.4	105.6	101.2	132	162.8
46	80 1/2	73.6	73.6	82.8	92	96.6	110.4	105.8	138	170.2
48	84	76.8	76.8	86.4	96	100.8	115.2	110.4	144	177.6
50	87 1/2	80.0	80.0	90.0	100	105.0	120.0	115.0	150	185.0

U. S. Capitol Thin Tube Wall Radiators

For wall hung application. The narrow width of 3 1/4 inches and overall height of 24 inches readily permits substitution for the heavier type conventional wall radiator. Height, center to center end tappings, 21 5/16 inches.

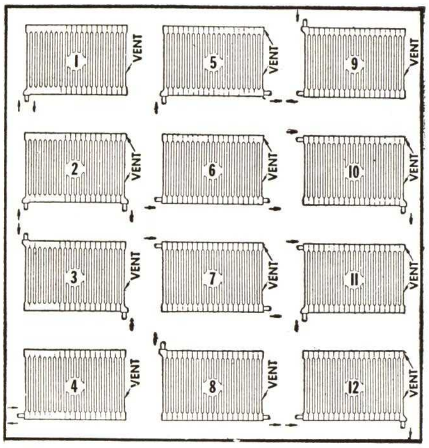
Can be furnished with 1-inch top or bottom tappings in addition to regular end tappings, thereby facilitating installation to any wall space available.

Square feet per lineal inch, .0914.



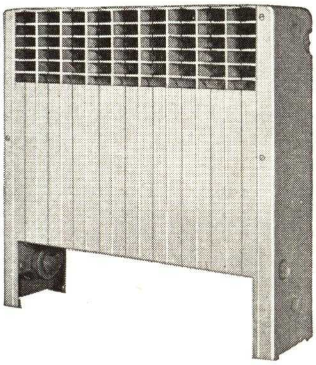
Number of Sections	Heating Surface Square Feet	LENGTH OVERALL, INCHES With End Tapping	With Top or Bottom Tapping
2	3.2	2 5/8	4 7/8
4	6.4	6 1/8	8 3/8
6	9.6	9 5/8	11 7/8
8	12.8	13 1/8	15 3/8
10	16.0	16 5/8	18 7/8
12	19.2	20 1/8	22 3/8
14	22.4	23 5/8	25 7/8
16	25.6	27 1/8	29 3/8
18	28.8	30 5/8	32 7/8
20	32.0	34 1/8	36 3/8
22	35.2	37 5/8	39 7/8
24	38.4	41 1/8	43 3/8
26	41.6	44 5/8	46 7/8
28	44.8	48 1/8	50 3/8
30	48.0	51 5/8	53 7/8
32	51.2	55 1/8	57 3/8
34	54.4	58 5/8	60 7/8
36	57.6	62 1/8	64 3/8
38	60.8	65 5/8	67 7/8
40	64.0	69 1/8	71 3/8
42	67.2	72 5/8	74 7/8
44	70.4	76 1/8	78 3/8
46	73.6	79 5/8	81 7/8
48	76.8	83 1/8	85 3/8
50	80.0	86 5/8	88 7/8

Specify No. of tapping arrangement desired.

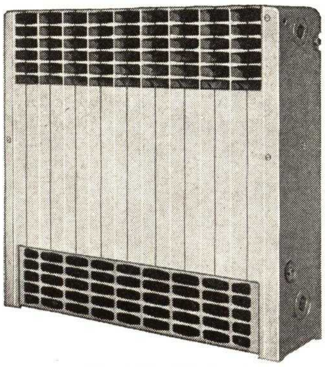


Tapping Arrangement of Wall Radiators

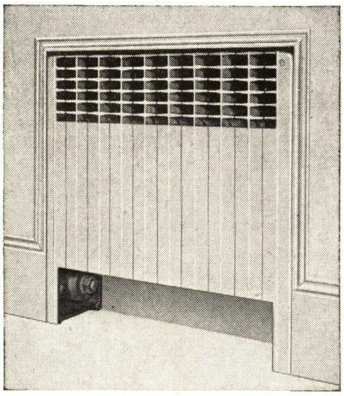
Sunrad Radiators



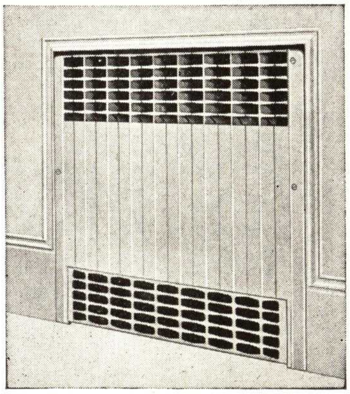
Free Standing, without Bottom Grille



Free Standing, with Bottom Grille



Recessed, without Bottom Grille—Piping Connections not Shown



Recessed, with Bottom Grille

A modern radiator embodying new ideas in design and canstruction Developed for the dual purpose of either free-standing or recessed installation, without a separate metal or wood enclosure. Attractive, highly efficient, compact and space saving.

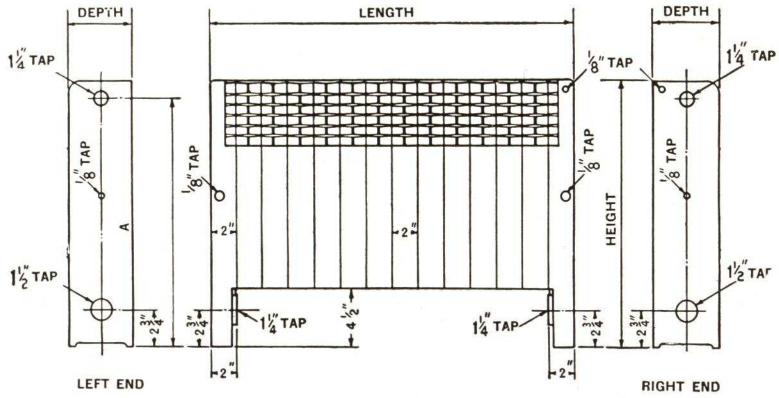
Has cabinet-like exterior which can be painted or enameled any color to match surroundings.

Available in two convenient heights and depths: 20 inches high and 5 inches deep, or 23 inches high and 7½ inches deep. Can also be furnished without legs, in both 5 and 7½-inch depths.

Inlet opening can be provided with a removable metal grille of same lattice design as the outlet.

Ratings and Dimensions

Based upon Engineering Standard of 240 BTU. Emission per Square Foot per Hour



With Legs

		20x5	23x7½
Size	inches	**20x5**	**23x7½**
*Heat Output	square feet	2.0	3.0
Length per Section	inches	2	2
Depth	inches	5	7½
Height	inches	20	25
Dimension A	inches	$18\frac{11}{16}$	$21\frac{11}{16}$

*Outputs shown are for free standing radiation. For recessed installations, before selecting radiator, add 5 per cent to room radiation requirements if ¾-inch air space at top and ½-inch at back and sides is provided; and add 15 per cent if tightly recessed without clearance top and sides but with ½-inch space at back.

Connections

Both steam and water extra heavy 1-in. (on 5x20-in.) and 1¼-in. (on 7½x23-in.) malleable nipples at top and bottom. End sections regularly supplied with 1¼-in. inside bottom tappings, and 1½-in. outside bottom and 1¼-in. outside top tappings, or bushed if so specified, for T-3, T-4 and T-6 connections. All other connections furnished with closed leg on one end section and order must specify right or left supply.

Data on legless types for wall hung installation, typical recessed installation, tappings available, and conversion factors for specified hot water temperatures will be furnished upon request.

Arco Convectors

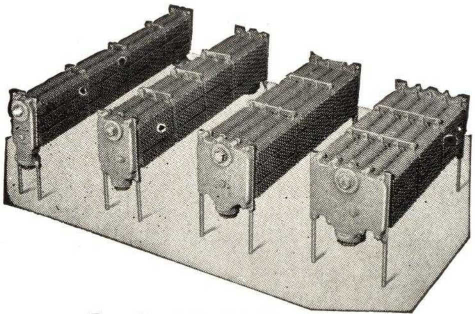
Well adapted for steam, vapor, or hot water systems. When installed with Arco enclosure, combines high heating efficiency with attractive appearance.

Made of cast iron sections, all contacting surfaces of which are machine-ground, assembled with malleable nipples and individual tie bolts at each nipple port. This construction develops an exceptionally sturdy unit which is able to withstand the usual handling abuses met with before final installation.

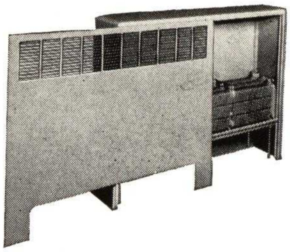
Arco Convectors possess a long carry-over output, a distinct advantage when used with automatically controlled heating apparatus.

Variety of piping connections provided permits installation in limited space allowances. The No. 3, No. 5, and No. 7 units are tapped 1¼ inches, and No. 9, 1½ inches.

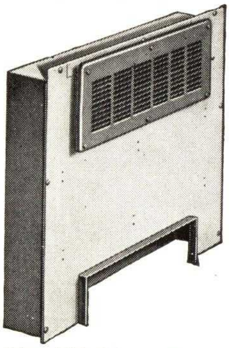
Steel legs are furnished, without charge, to support the convector, and are screwed into tappings in the bottom of each header, permitting adjustment for leveling or pitching.



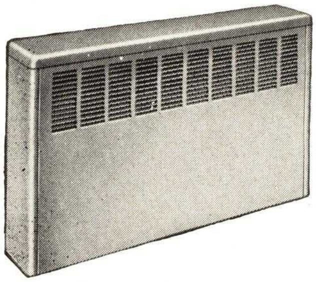
Four Widths of Arco Convector No. 3—3¾ Inches, No. 5—5⅝ Inches, No. 7—7⅝ Inches, and No. 9—9½ Inches



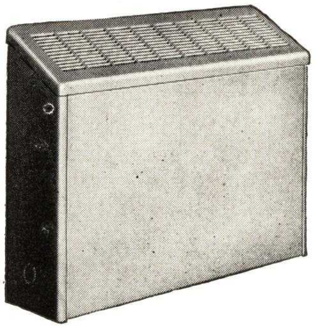
Typical Installation of Arco Convector in Arco Enclosure



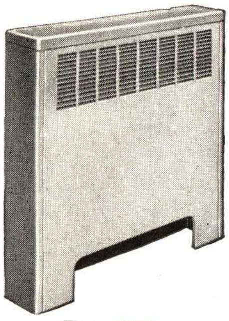
Type PF—Plaster Front
Complete enclosure for tile or plaster treatment. Must be fully recessed. Rounded corners and streamlined grille.



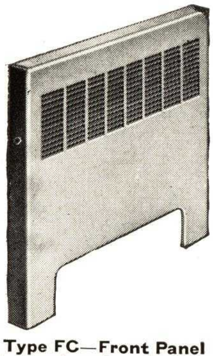
Type W—Wall Hung
A complete enclosure for wall hung treatment. Rounded corners and streamlined grille. Has a removable pan type front.



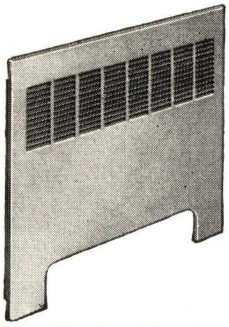
Type SW—Wall Hung
A complete enclosure, with sloping top, for wall hung treatment. Rounded corners and streamlined grille. Has a removable pan type front.



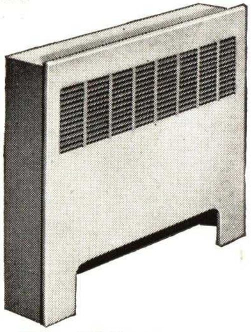
Type NFS
A complete enclosure for general use. Can be free standing, although is usually partially recessed. Rounded corners, streamlined grille, removable pan type front.



Type FC—Front Panel
A front panel only, designed for recess treatment only. Has top and side flange which sets against face of plaster. Used where wider convectors are required in shallow recesses. Rounded corners and streamlined grille.



Type FP—Front Panel
A front panel only, designed for recessed treatment only. Is flush with plaster and made to overlap recess at top and sides. Rounded corners and streamlined grille. Type PFP, Plastic Front panel only.



Types OF and OFC—Overlap Front
Type OF front secured with screws. Type OFC front secured with friction clips (60-inch maximum length). Complete enclosures for recessed treatment, either in blank walls or under windows. Rounded corners and streamlined grille.

Optional Features at Extra Cost

Damper, access door, insulation, loose grille, square or slotted outlet and inlet grilles, and other than standard lengths and heights can be furnished on all types. Inlet grille can be furnished on all types except W and SW. Panel moulding can be furnished on all types except PF and PFP. Top outlet grille for vertical discharge available on Types NFS and W. Special gages and designs also available.

Arco Enclosures

Designed on simple but attractive lines. They harmonize with any decorative treatment.

Scientifically proportioned to conduct the right volume of air over the heated surfaces of the convectors and diffuse it into the rooms, properly heated.

Arco Steam or Water Convector Ratings

*Outputs in Square Feet Equivalent Direct Radiation

No. 3—3¾ Inches Wide

Length Inches	Unit No.	Type W Enclosure Height, Inches								
		14	16	18	20	22	25	28	31	34
		Enclosure Height Except Type W								
		18	20	22	24	26	29	32	35	38
13	313	6.0	6.5	7.0	7.5	7.8	8.2	8.4	8.6	8.8
18	318	8.4	9.1	9.8	10.5	11.0	11.5	11.8	12.1	12.3
20½	320	9.7	10.5	11.2	12.0	12.6	13.1	13.5	13.8	14.1
23	323	10.9	11.8	12.7	13.5	14.2	14.8	15.2	15.6	15.9
25½	325	12.1	13.1	14.1	15.0	15.8	16.4	16.9	17.3	17.6
28	328	13.3	14.4	15.5	16.5	17.4	18.1	18.6	19.0	19.4
30½	330	14.5	15.7	16.9	18.1	19.0	19.8	20.4	20.8	21.2
33	333	15.8	17.1	18.4	19.7	20.6	21.5	22.1	22.6	23.0
35½	335	17.0	18.4	19.8	21.1	22.2	23.1	23.8	24.3	24.7
38	338	18.2	19.7	21.3	22.7	23.8	24.8	25.5	26.1	26.5
40½	340	19.4	21.0	22.6	24.2	25.3	26.4	27.2	27.8	28.3
43	343	20.6	22.3	24.1	25.7	26.9	28.1	28.9	29.6	30.1
45½	345	21.8	23.6	25.4	27.2	28.5	29.7	30.6	31.3	31.8
48	348	23.1	25.0	26.9	28.7	30.1	31.4	32.3	33.1	33.6
50½	350	24.3	26.3	28.3	30.2	31.7	33.0	34.0	34.8	35.4
53	353	25.5	27.6	29.8	31.8	33.3	34.7	35.7	36.5	37.2
55½	355	26.7	28.9	31.1	33.3	34.9	36.3	37.4	38.2	38.9
58	358	28.0	30.3	32.6	34.8	36.5	38.0	39.1	40.0	40.7
60½	360	29.2	31.6	34.0	36.3	38.1	39.6	40.8	41.7	42.5
63	363	30.5	33.0	35.5	37.9	39.7	41.3	42.5	43.5	44.3
65½	365	31.7	34.3	36.9	39.4	41.3	42.9	44.2	45.2	46.1
68	368	33.0	35.7	38.4	41.0	42.9	44.6	45.9	47.0	47.9
70½	370	34.2	37.0	39.8	42.5	44.5	46.2	47.6	48.7	49.7
73	373	35.5	38.4	41.3	44.1	46.1	47.9	49.3	50.5	51.5
75½	375	36.7	39.7	42.7	45.6	47.7	49.5	51.0	52.2	53.3
78	378	38.0	41.1	44.2	47.2	49.3	51.2	52.7	54.0	55.1
80½	380	39.2	42.4	45.6	48.7	50.9	52.8	54.4	55.7	56.9
83	383	40.5	43.8	47.1	50.3	52.5	54.5	56.1	57.5	58.7
85½	385	41.7	45.1	48.5	51.8	54.1	56.1	57.8	59.2	60.5
88	388	43.0	46.5	50.0	53.4	55.7	57.8	59.5	61.0	62.3
90½	390	44.2	47.8	51.4	54.9	57.3	59.4	61.2	62.7	64.1
93	393	45.5	49.2	52.9	56.5	58.9	61.1	62.9	64.5	65.9
95½	395	46.7	50.5	54.3	58.0	60.5	62.7	64.6	66.2	67.7
98	398	48.0	51.9	55.8	59.6	62.1	64.4	66.3	68.0	69.5
100½	3100	49.2	53.2	57.2	61.1	63.7	66.0	68.0	69.7	71.3

No. 5—5⅝ Inches Wide

13	513	8.7	9.5	10.3	10.9	11.5	12.0	12.4	12.7	12.9
18	518	12.3	13.5	14.5	15.4	16.2	17.0	17.5	17.9	18.2
20½	520	14.1	15.4	16.6	17.6	18.5	19.4	20.1	20.5	20.8
23	523	15.9	17.4	18.7	19.9	20.9	21.9	22.6	23.1	23.5
25½	525	17.7	19.3	20.8	22.2	23.2	24.4	25.2	25.7	26.1
28	528	19.5	21.3	23.0	24.4	25.6	26.9	27.7	28.3	28.8
30½	530	21.3	23.2	25.1	26.6	28.0	29.3	30.3	30.9	31.4
33	533	23.1	25.2	27.2	28.9	30.4	31.8	32.9	33.5	34.1
35½	535	24.9	27.2	29.3	31.1	32.7	34.3	35.4	36.1	36.7
38	538	26.7	29.2	31.4	33.4	35.1	36.8	38.0	38.7	39.4
40½	540	28.5	31.1	33.5	35.6	37.4	39.2	40.5	41.3	42.0
43	543	30.3	33.1	35.6	37.9	39.8	41.7	43.1	43.9	44.7
45½	545	32.1	35.0	37.7	40.1	42.1	44.2	45.6	46.5	47.3
48	548	33.9	37.0	39.8	42.4	44.5	46.7	48.1	49.1	50.0
50½	550	35.7	38.9	42.0	44.6	46.8	49.1	50.7	51.7	52.6
53	553	37.5	40.9	44.1	46.8	49.2	51.6	53.3	54.3	55.3
55½	555	39.3	42.8	46.2	49.0	51.5	54.0	55.8	56.9	57.9
58	558	41.1	44.8	48.3	51.3	53.9	56.5	58.4	59.5	60.6
60½	560	42.9	46.7	50.4	53.5	56.3	59.0	60.9	62.1	63.2
63	563	44.7	48.7	52.5	55.8	58.7	61.5	63.5	64.7	65.9
65½	565	46.5	50.6	54.6	58.0	61.0	63.9	66.0	67.3	68.5
68	568	48.3	52.6	56.7	60.3	63.4	66.4	68.6	69.9	71.2
70½	570	50.1	54.5	58.8	62.5	65.7	68.8	71.1	72.5	73.8
73	573	51.9	56.5	60.9	64.8	68.1	71.3	73.7	75.1	76.5
75½	575	53.7	58.4	63.0	67.0	70.4	73.7	76.2	77.7	79.1
78	578	55.5	60.4	65.1	69.3	72.8	76.2	78.8	80.3	81.8
80½	580	57.3	62.3	67.2	71.5	75.1	78.6	81.3	82.9	84.4
83	583	59.1	64.3	69.3	73.8	77.5	81.8	83.9	85.5	87.1
85½	585	60.9	66.2	71.4	76.0	79.8	83.5	86.4	88.1	89.7
88	588	62.7	68.2	73.5	78.3	82.2	86.0	89.0	90.7	92.4
90½	590	64.5	70.1	75.6	80.5	84.5	88.4	91.5	93.3	95.0
93	593	66.3	72.1	77.7	82.8	86.9	90.9	94.1	95.9	97.7
95½	595	68.1	74.0	79.8	85.0	89.2	93.3	96.6	98.5	100.3
98	598	69.9	76.0	81.9	87.3	91.6	95.8	99.2	101.1	103.0
100½	5100	71.7	77.9	84.0	89.5	93.9	98.2	101.7	103.7	105.6

*To determine size of radiator divide total heat loss in British thermal units by 240 for steam at 215°.

The above ratings are based on front outlet enclosures. Standard enclosures are 1½ inches longer than convector lengths shown.

Arco Steam or Water Convector Ratings

*Outputs in Square Feet Equivalent Direct Radiation

No. 7—7⅝ Inches Wide

Length Inches	Unit No.	Type W Enclosure Height, Inches							
		16	18	20	22	25	28	31	34
		Enclosure Height Except Type W							
		20	22	24	26	29	32	35	38
13	713	12.1	12.9	13.7	14.4	15.3	15.9	16.4	16.7
18	718	17.1	18.3	19.4	20.4	21.6	22.5	23.1	23.7
20½	720	19.7	21.0	22.2	23.4	24.8	25.8	26.5	27.1
23	723	22.2	23.6	25.0	26.4	27.9	29.1	29.9	30.6
25½	725	24.7	26.3	27.9	29.4	31.1	32.4	33.3	34.1
28	728	27.2	29.0	30.7	32.4	34.2	35.7	36.7	37.5
30½	730	29.7	31.7	33.6	35.4	37.4	39.0	40.1	41.0
33	733	32.2	34.4	36.4	38.4	40.6	42.3	43.5	44.5
35½	735	34.7	37.0	39.2	41.3	43.7	45.6	46.9	47.9
38	738	37.2	39.7	42.1	44.3	46.9	48.9	50.3	51.4
40½	740	39.7	42.3	44.9	47.3	50.1	52.2	53.7	54.9
43	743	42.3	45.0	47.8	50.3	53.3	55.5	57.1	58.4
45½	745	44.8	47.7	50.6	53.3	56.4	58.7	60.4	61.8
48	748	47.3	50.4	53.5	56.3	59.6	62.0	63.8	65.3
50½	750	49.8	53.1	56.3	59.3	62.7	65.3	67.2	68.8
53	753	52.3	55.8	59.2	62.3	65.9	68.6	70.6	72.3
55½	755	54.8	58.4	62.0	65.3	69.0	71.9	74.0	75.7
58	758	57.3	61.1	64.9	68.3	72.2	75.2	77.4	79.2
60½	760	59.8	63.8	67.7	71.3	75.4	78.5	80.8	82.9
63	763	62.3	66.5	70.6	74.3	78.6	81.8	84.2	86.1
65½	765	64.8	69.2	73.4	77.3	81.7	85.1	87.6	89.5
68	768	67.3	71.9	76.3	80.3	84.9	88.4	91.0	93.0
70½	770	69.8	74.6	79.1	83.3	88.0	91.7	94.4	96.4
73	773	72.3	77.3	82.0	86.3	91.2	95.0	97.8	99.9
75½	775	74.8	80.0	84.8	89.3	94.3	98.3	101.2	103.3
78	778	77.3	82.7	87.7	92.3	97.5	101.6	104.6	106.8
80½	780	79.8	85.4	90.5	95.3	100.6	104.9	108.0	110.2
83	783	82.3	88.1	93.4	98.3	103.8	108.2	111.4	113.7
85½	785	84.8	90.8	96.2	101.3	106.9	111.5	114.8	117.1
88	788	87.3	93.5	99.1	104.3	110.1	114.8	118.2	120.6
90½	790	89.8	96.2	101.9	107.3	113.2	118.1	121.6	124.0
93	793	92.3	98.9	104.8	110.3	116.4	121.4	125.0	127.5
95½	795	94.8	101.6	107.6	113.3	119.5	124.7	128.4	130.9
98	798	97.3	104.3	110.5	116.3	122.7	128.0	131.8	134.4
100½	7100	99.8	107.0	113.3	119.3	125.8	131.3	135.2	137.8

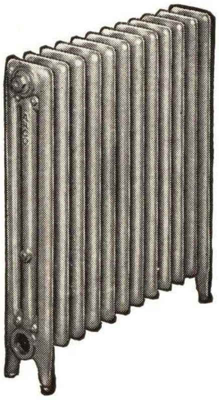
No. 9—9½ Inches Wide

13	913	14.5	15.5	16.5	17.3	18.4	19.2	19.8	20.3
18	918	20.6	22.0	23.4	24.6	26.1	27.3	28.1	28.8
20½	920	23.7	25.3	26.9	28.2	29.9	31.3	32.2	33.0
23	923	26.7	28.5	30.3	31.8	33.7	35.3	36.4	37.2
25½	925	29.8	31.8	33.8	35.5	37.6	39.3	40.5	41.4
28	928	32.8	35.0	37.2	39.1	41.4	43.3	44.7	45.7
30½	930	35.9	38.3	40.7	42.7	45.3	47.3	48.8	49.9
33	933	38.9	41.6	44.2	46.3	49.2	51.4	53.0	54.2
35½	935	41.9	44.8	47.6	50.0	53.0	55.4	57.1	58.4
38	938	45.0	48.1	51.1	53.6	56.8	59.5	61.3	62.7
40½	940	48.0	51.3	54.5	57.2	60.6	63.4	65.4	66.9
43	943	51.1	54.6	58.0	60.8	64.5	67.5	69.6	71.2
45½	945	54.1	57.8	61.4	64.5	68.3	71.5	73.7	75.3
48	948	57.2	61.1	64.9	68.1	72.2	75.6	77.9	79.6
50½	950	60.2	64.3	68.3	71.8	76.0	79.5	82.0	83.8
53	953	63.3	67.6	71.8	75.4	79.9	83.6	86.2	88.1
55½	955	66.3	70.8	75.2	79.0	83.7	87.5	90.3	92.3
58	958	69.4	74.1	78.7	82.6	87.6	91.6	94.4	96.6
60½	960	72.4	77.3	82.1	86.2	91.4	95.6	98.5	100.8
63	963	75.5	80.6	85.6	89.8	95.3	99.7	102.7	105.1
65½	965	78.5	83.8	89.0	93.4	99.1	103.7	106.8	109.3
68	968	81.6	87.1	92.5	97.0	103.0	107.8	111.0	113.6
70½	970	84.6	90.3	95.9	100.6	106.8	111.8	115.1	117.8
73	973	87.7	93.6	99.4	104.2	110.7	115.9	119.3	122.1
75½	975	90.7	96.8	102.8	107.8	114.5	119.9	123.4	126.3
78	978	93.8	100.1	106.3	111.4	118.4	124.0	127.6	130.6
80½	980	96.8	103.3	109.7	115.0	122.2	128.0	131.7	134.8
83	983	99.9	106.6	113.2	118.6	126.1	132.1	135.9	139.1
85½	985	102.9	109.8	116.6	122.2	129.9	136.1	140.0	143.3
88	988	106.0	113.1	120.1	125.8	133.8	140.2	144.2	147.6
90½	990	109.0	116.3	123.5	129.4	137.6	144.2	148.3	151.8
93	993	112.1	119.6	127.0	133.0	141.5	148.3	152.5	156.1
95½	995	115.1	122.8	130.4	136.6	145.3	152.3	156.6	160.3
98	998	118.2	126.1	133.9	140.2	149.2	156.4	160.8	164.6
100½	9100	121.3	129.3	137.3	143.8	153.0	160.4	164.9	168.8

*To determine size of radiator, divide total heat loss in British thermal units by 240 for steam at 215°.

The above ratings are based on front outlet enclosures. Standard enclosures are 1½ inches longer than convector lengths shown.

Arco Radiators



A small compact radiator ideal for recessing. Combines maximum heating effectiveness, minimum space requirement, attractive appearance and ease of cleaning.

Length, 1¾ inches per section.

Tappings are 1-inch top and 1¼-inch bottom on 3, 4 and 5-tube radiators, 1¼-inch top and 1½-inch bottom on 6-tube radiators. Bushed if so specified.

Extra heavy malleable nipples at top and bottom, 1-inch for 3, 4 and 5-tube, 1¼-inch for 6-tube radiators.

Available only in even number of sections.

Shipping weight per square foot, approximately 4½ pounds.

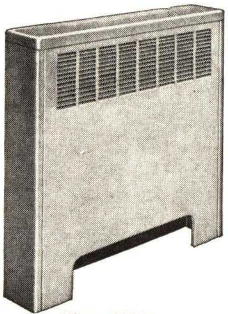
Heat Output—Square Feet

		3-Tube Wd. 3½ In. Cen. 1¾ In.	4-Tube Width, 4¾ In. Centers, 1¾ In.			5-Tube Width, 6 In. Centers, 1¾ In.		6-Tube Width 7⅞ Inches Centers, 1¾ In.		
No. of Sec-tons	Lgth. In.	25-In. Ht. 1.6 Sq. Ft. per Sec.	19-In. Ht. 1.6 Sq. Ft. per Sec.	22-In. Ht. 1.8 Sq. Ft. per Sec.	25-In. Ht. 2. Sq. Ft. per Sec.	22-In. Ht. 2.1 Sq. Ft. per Sec.	25-In. Ht. 2.4 Sq. Ft. per Sec.	19-In. Ht. 2.3 Sq. Ft. per Sec.	25-In. Ht. 3. Sq. Ft. per Sec.	32-In. Ht. 3.7 Sq. Ft. per Sec.
2	3½	3.2	3.2	3.6	4	4.2	4.8	4.6	6	7.4
4	7	6.4	6.4	7.2	8	8.4	9.6	9.2	12	14.8
6	10½	9.6	9.6	10.8	12	12.6	14.4	13.8	18	22.2
8	14	12.8	12.8	14.4	16	16.8	19.2	18.4	24	29.6
10	17½	16.	16.	18.	20	21.0	24.0	23.	30	37.
12	21	19.2	19.2	21.6	24	25.2	28.8	27.6	36	44.4
14	24½	22.4	22.4	25.2	28	29.4	33.6	32.2	42	51.8
16	28	25.6	25.6	28.8	32	33.6	38.4	36.8	48	59.2
18	31½	28.8	28.8	32.4	36	37.8	43.2	41.4	54	66.6
20	35	32.	32.	36.	40	42.0	48.0	46.	60	74.
22	38½	35.2	35.2	39.6	44	46.2	52.8	50.6	66	81.4
24	42	38.4	38.4	43.2	48	50.4	57.6	55.2	72	88.8
26	45½	41.6	41.6	46.8	52	54.6	62.4	59.8	78	96.2
28	49	44.8	44.8	50.4	56	58.8	67.2	64.4	84	103.6
30	52½	48.	48.	54.	60	63.0	72.0	69.	90	111.
32	56	51.2	51.2	57.6	64	67.2	76.8	73.6	96	118.4
34	59½	54.4	54.4	61.2	68	71.4	81.6	78.2	102	125.8
36	63	57.6	57.6	64.8	72	75.6	86.4	82.8	108	133.2
38	66½	60.8	60.8	68.4	76	79.8	91.2	87.4	114	140.6
40	70	64.	64.	72.	80	84.0	96.0	92.	120	148.
42	73½	67.2	67.2	75.6	84	88.2	100.8	96.6	126	155.4
44	77	70.4	70.4	79.2	88	92.4	105.6	101.2	132	162.8
46	80½	73.6	73.6	82.8	92	96.6	110.4	105.8	138	170.2
48	84	76.8	76.8	86.4	96	100.8	115.2	110.4	144	177.6
50	87½	80.	80.	90.	100	105.0	120.0	115.	150	185.

No. of Tubes....	**3**	**4**	**4**	**4**	**5**	**5**	**6**	**6**	**6**
Height...in.	25	19	22	25	22	25	19	25	32
*Square Feet	.914	.914	1.029	1.143	1.20	1.371	1.314	1.714	2.114

*Square feet per lineal inch.

Arco Streamlined Enclosures



Type NFS

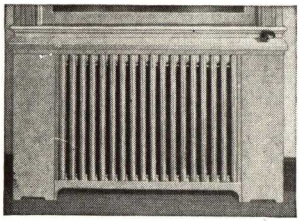
Enclosure constructed of strongly braced furniture steel, correctly designed to insure greatest efficiency and primed for painting before shipping.

Type NFS is the standard complete enclosure for general use, consisting of top, back, ends and a removable front. It can be fully recessed, partially recessed or completely free standing in the room.

Other complete enclosures: Type PF, Plaster Front, designed for use in plaster or tile treatments; Types OF and OFC, Overlap Front, in which the front overlaps tile or plaster; and Types W and SW, Wall Hung, for wall-hung or off-the-floor treatment.

Panel fronts only, Types FP, PFP, and FC are also available for practically any treatment.

Arco O. K. Enclosures

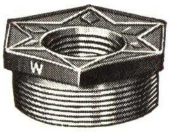


This enclosure for Arco free standing radiators.

Covers the radiator attractively, but leaves front of radia tor exposed for better comfort.

Has a convenient flat top.

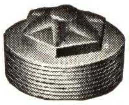
Walworth Essentric Bushings



Size Inches	No. 1119 Black Each	No. 1519 Galv. Each
1¼x ½ 1¼x ¾	$.22	$.44
1½x ½ 1½x ¾	.25	.50
2 x ½ 2 x ¾ 2 x 1 2 x1¼	.27	.54
2½x ½ 2½x ¾ 2 x1 2 x1¼ 2 x1½	.42	.84
3 x ¾ 3 x1 3 x1¼ 3 x1½ 3 x2	.60	1.20

Size Inches	No. 1119 Black Each	No. 1519 Galv. Each
3½x1¼ 3½x1½ 3½x2 3½x2½	$.80	$1.60
4 x1 4 x1¼ 4 x1½ 4 x2 4 x2½ 4 x3	1.00	2.00
5 x2 5 x2½ 5 x3 5 x3½ 5 x4	1.85	3.70
6 x2 6 x2½ 6 x3 6 x4	2.50	5.00

No. 337 Standard Cast Iron Radiator Plugs



Size....................inches	¾	1	1¼	1½	2
No. 337....................each	$.06	.08	.10	.14	.20

Peerless Wall Radiators

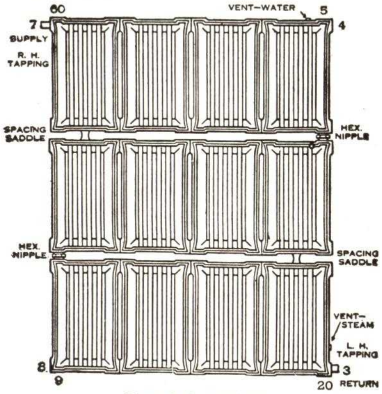
Tappings and Assemblage

Continued

Regular tappings furnished with Peerless Wall Radiation are indicated by figures 3, 4, 5, 7, 8, and 9.

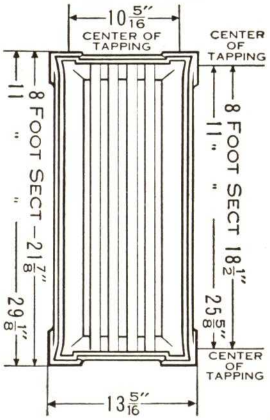
Special tappings indicated by figures 20 and 60 will be made at extra charge.

When ordering, designate assemblage and tapping by number under sketch.


60
VENT–WATER
5
7
SUPPLY
R. H. TAPPING
4
SPACING SADDLE
HEX. NIPPLE
HEX. NIPPLE
SPACING SADDLE
VENT–STEAM
L. H. TAPPING
8
3
9
20
RETURN

Nos. 842 or 1142
Assembled in Twelve Sections in Three Tiers Using Spacing Saddles

Measurements


10 5/16"
CENTER OF TAPPING
CENTER OF TAPPING
11"
8 FOOT SECT – 21 7/8"
29 1/8"
8 FOOT SECT 18 1/2"
11"
25 5/8"
CENTER OF TAPPING
13 5/16"

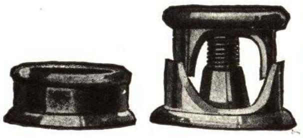
No. Sections	Width of Space Occupied Ft. In.	Heat Output Sq. Ft. Type 83	Heat Output Sq. Ft. Type 11B
1	1– 1 5/16	8	11
2	2– 2 5/8	16	22
3	3– 3 15/16	24	33
4	4– 5 1/4	32	44
5	5– 6 9/16	40	55
6	6– 7 7/8	48	66
7	7– 9 3/16	56	77
8	8–10 1/2	64	88
9	9–11 13/16	72	99
10	11– 1 1/8	80	110
11	12– 2 7/16	88	121
12	13– 3 3/4	96	132
13	14– 5 1/16	104	143
14	15– 6 3/8	112	154
15	16– 7 11/16	120	165
16	17– 9	128	176
17	18–10 5/16	136	187
18	19–11 5/8	144	198
19	21– 0 15/16	152	209
20	22– 2 1/4	160	220
21	23– 3 9/16	168	231
22	24– 4 7/8	176	242
23	25– 6 3/16	184	253
24	26– 7 1/2	192	264
25	27– 8 13/16	200	275
26	28–10 1/8	208	286

Add ½ inch to the length for each end bushed and 1⅛ inches for each hexagon nipple used in assembling.

Arco Radiator Pedestals

Made of cast iron, in heights of ½, 1 and 1½ inches.

Cast Iron Adjustable Radiator Feet



No.	Extension Inches	Price Each
1	⅞ to 1¼	**$.30**
2	1¼ to 1¾	**.35**
3	1½ to 2½	**.45**
4	2 to 3	**.50**
5	3 to 4	**.55**
6	4 to 5	**.60**

No. 4 Radiator Push Nipples

Can be furnished in all sizes for all types of radiators.

No. 4....................each **$.30**

Type L Young Streamaire Copper Bathroom Convectors

Small and compact, for installation under any average-size lavatory fixture.

Just 8 inches high and 15 inches long, it saves floor space in one of the smallest rooms of the house.

Grille is located in top of the fixture and louvers are formed and protrude outward, forcing heat away from wall surfaces.

One-piece top and front panel are easily removed. Sizes and capacities on application.

Type LF Young Streamaire Copper Bathroom Convectors

For installation under lavatory fixtures—used where there is no obstruction in front of the convector.

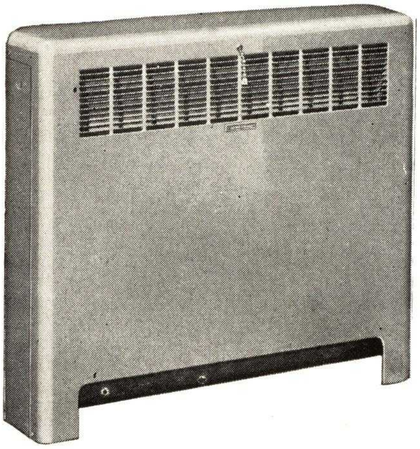
Size 10 inches high and 20 inches long.

One-piece top and front panel may be easily removed. Unit is light and is supported by the piping.

Sizes and capacities on application.

Type C Young Streamaire Copper Convectors

Free-Standing Type



Ideal for office use, where convector may be placed below window, to protect against cold from air infiltration, and to save floor and wall space. Popular for remodeling, as well as for new construction, since convector may be installed easily in place of old radiator, requiring practically no piping changes.

Made from heavy-gage steel, thoroughly reinforced, for durable construction and long-lasting service. Heating element is of copper tube and non-ferrous fin construction. Smoothly rounded lines of the convector cabinet are formed by special dies.

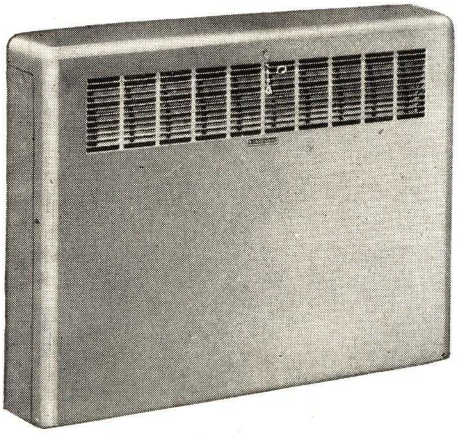
Convector is furnished with a louver grille at top; bottom is cut out for unobstructed air intake.

The quantity of heat may be quickly and effortlessly regulated by adjusting simple chain-control damper.

Sizes and capacities on application.

Type W Young Streamaire Copper Convectors

Wall-Hung Type



Convector is installed 4 inches or more from the floor, thus providing ample clearance for routine floor cleaning. This feature is especially desirable in heating installations for office and public buildings, hospitals, and other institutions where daily floor cleaning is required.

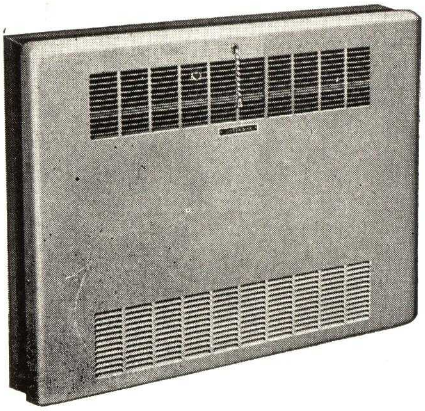
Constructed of durable, heavy-gage steel. Heating element is of copper tube and non-ferrous fin construction.

Enclosure can be easily installed—is bolted to walls through reinforced keyhole slots which hold convector in place. An easily removed one-piece front and top panel makes it a simple matter to reach wall fasteners or heating element.

Sizes and capacities on application.

Type S Young Streamaire Copper Convectors

Partially-Recessed Type



This type permits most of the convector to be recessed in the wall and is particularly suited to new construction since it may be easily placed in wall recesses.

Convector may be installed either before or after plastering as special Z-bars are spot-welded to the sides of the enclosure, thereby governing the distance convector will project into the room.

Made of heavy-gage steel, thoroughly reinforced. Heating element is of copper tube and non-ferrous fin construction.

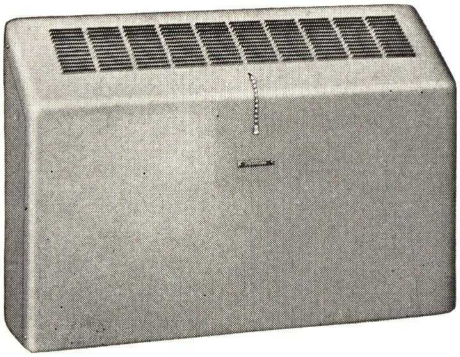
All joints between plaster and grounds are lapped by the enclosure. Air seal prevents air leakage around edge of front panel.

Convector has grilles at top and bottom of cabinet.

Sizes and capacities on application.

Type WS Young Streamaire Copper Convectors

Wall-Hung Type—With Sloping Top



This convector, with its 30° sloping top, is recommended for offices, schools, libraries, etc., to prevent placing of objects on grilles thereby cutting off air circulation and reducing heat output. Provides maximum circulation of warm air, kept at an even temperature, without drafts.

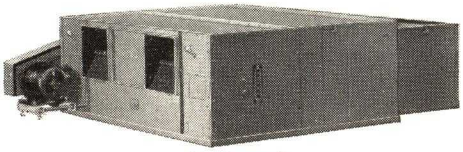
Made of heavy-gage steel, thoroughly reinforced. Heating element is of copper tube and non-ferrous fin construction.

Hot air discharge grille is located in the 30° sloping top of the cabinet. The grille louvers are formed and protrude outward to deflect air flow into room and away from wall.

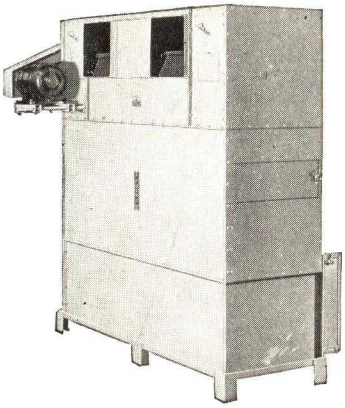
A chain-control damper makes heat control easy.

Sizes and capacities on application.

Young Streamaire Air Conditioning Units



Horizontal



Vertical

Compact in design, this unit occupies little space when installed. The horizontal unit is for ceiling or platform mounting; the vertical, for floor mounting.

The heavy-gage galvanized sheet steel casing is assembled in sections, each containing separate operating parts of the unit (fan, heating and cooling coil, humidifier, filter). Coils furnished for steam or hot water heating and water, brine, or direct expansion cooling.

This assembly makes it possible to purchase a unit for heating only, for cooling or for heating and cooling.

Available in 8 physical sizes ranging in capacities from 450 cfm. to 15,750 cfm.

Sizes and capacities on application.

Type SH Young Unit Heaters

Horizontal Discharge

Core is of red brass tube and copper fin construction with the tubes rolled into special close grained, one-piece, cast iron headers, reinforced with brass ferrules.

Heating capacities vary from 27,000 to 325,000 Btu. per hour with 60° entering air and 2 pounds per square inch steam pressure.

Casing is of heavy-gage sheet metal in baked brown wrinkle finish.

Sizes and capacities on application.

Type V Young Unit Heaters

Vertical Discharge

Core is of red brass tube and copper fin construction with the tubes rolled into special close grained, cast iron headers, reinforced with brass ferrules. Split headers are used for proper condensate drainage.

Unit can be furnished with Streamaire diffusers (illustrated), cone diffusers, two or four-way discharge nozzles, or three or four-cone anemostats.

Heating capacities vary from 59,600 to 520,000 Btu. per hour with 60° entering air and 2 pounds per square inch steam pressure.

Casing is heavy-gage sheet metal in baked brown wrinkle finish.

Sizes and capacities on application.

Young Heating and Cooling Coils

Type B Blast Coils

Designed for use in central plant heating, ventilating, and air conditioning systems.

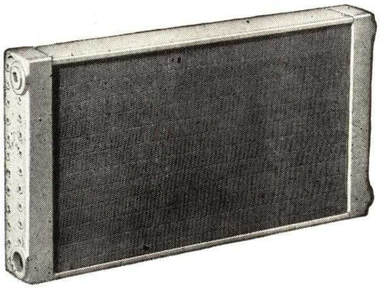
Coils furnished complete with casing for bolting the units to sheet metal housings.

Type A Booster Coils

Furnished in small sizes for installation in main or branch ducts.

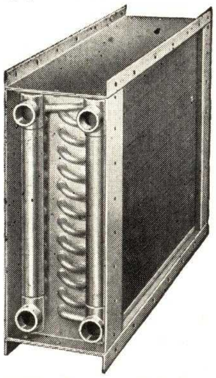
Coils are complete with casing for bolting the units to sheet metal ducts.

Type C Commercial Heat Transfer Coils



This coil is unencased and comes in a multiplicity of sizes for use in factory-built air conditioning, heating, drying, or special processing units.

Type W Water Coils



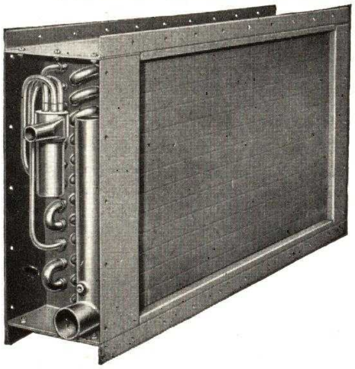
Suitable for use with water or brine.

This coil is of serpentine tube construction and is furnished complete with casings.

Type K Water Coils

This unit is of the cleanable tube type having removable gasketed header plates at each end of the coil, making the tubes accessible from either end or from both ends.

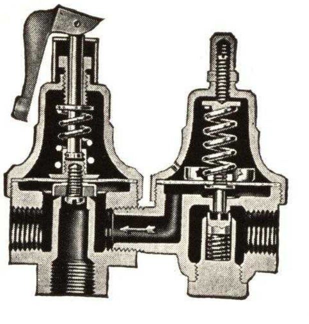
Type E Evaporator Coils



This unit is for direct expansion cooling systems using freon or methyl chloride.

Furnished complete with casing and with Young liquid distributor.

No. 450 Watts Hot Water Heating Regulators



A small, compact, all-bronze regulator.

Has a well-designed reducing valve and A. S. M. E. standard lever-type diaphragm relief valve with monel metal diaphragm.

Embodies every feature for full protection of the system.

Size, ½-inch I.P.S. female connections.

No. **450**, Weight, 3 Pounds....................each **$9.45**

No. 3 B&G Dual Unit Relief and Reducing Valves

BOILER
DRAIN
STRAINER

A combination relief and reducing valve. Body and all parts exposed to water are made of corrosion-proof brass. Has built-in strainer and extra large relief diaphragm.

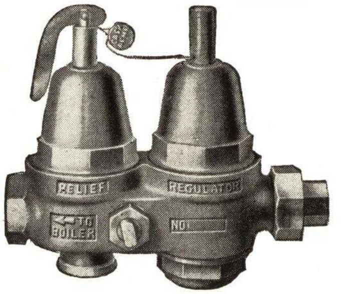
Size, ½-inch. Painted red.

No. **3**, Shipping Weight, 5 Pounds.............each **$14.86**

Cash-Acme Automatic Pressure Controls

For Hot Water Heating Systems

Type CB-L



Has a patented by-pass feature for quick filling of the system. Fully A.S.M.E. Standard and provided with a union for easy installation. Has a self-contained, readily cleaned strainer of ample capacity for seat protection, laminated bronze diaphragms, renewable seat discs, a bronze-nickel-chrome seat on the relief valve to resist sticking, and steel springs for long life.

By-pass makes it possible to produce a cold water leak test at full relief valve pressure without changing either the regulator or relief valve adjustment.

Pipe tappings, ½ inch. Shipping weight, 6 pounds.

Type CB-L.....................................each **$15.35**

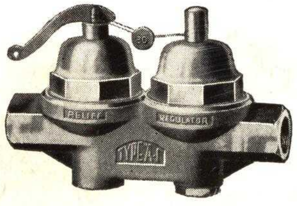
Type CA-L

Type CA-L control is exactly like the Type CB-L except that it does not have the by-pass feature.

Pipe tappings, ½ inch. Shipping weight, 6 pounds.

Type CA-L.....................................each **$14.35**

Type A-1



Type A-1 is equipped with and built from the same type of material as the above types. It has laminated multiple metal diaphragms, renewable composition seat discs, and a try-lever.

Pipe tappings, ½ inch.

Shipping weight, 5 pounds.

Type **A-1**.........each **$9.35**

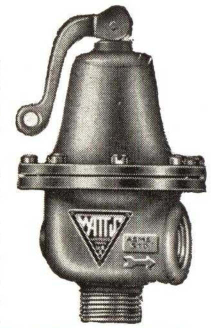
No. 300 Watts Large Size Bronze Diaphragm Relief Valves

No. 300A

Listed by Underwriters' Laboratories

All bronze construction — laminated monel metal diaphragms.

Made of the finest non-corrosive materials. The diaphragms have several laminations of monel metal. Waterways are extra large.



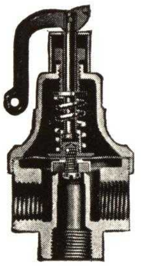
No. 300L, A.S.M.E. Std.

Pressure, 30–125 pounds, 125-pound standard setting; or pressure, 5–30 pounds, 30-pound standard setting.

Furnished with 125-pound standard setting unless otherwise specified.

Size..........................in.	1	1¼	1½	2
No. **300A**, Adjustable Reg. ea.	**$20.40**	**$28.80**	**$40.80**	**$54.00**
No. **300L**, Non-Adjustable, With Safety Test Lever each	**22.80**	**32.40**	**45.60**	**60.00**
Shipping Weight...........lb.	4¼	5½	7¾	12

No. 28L Watts Diaphragm Relief Valves



This valve is of the safety lever diaphragm type for house heating boilers.

Used principally on tank-in-basement hot water heating systems and other low pressure services. Designed for installation directly in the pipe line.

Valve is ½-inch A.S.M.E. standard, constructed entirely of bronze, with laminated monel diaphragms and safety test lever.

Furnished set and sealed at 25–30 pounds only.

Has ½-inch I.P.S. female connections.

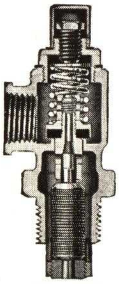
Height, 5 inches. Diameter, 2½ inches.

Weight, 1½ pounds.

No. **28L**......................................each **$5.26**

No. 40 Watts Autotherm Pressure and Temperature Relief Valves

Automatic Self-Closing



No. 40A

Used on domestic hot water tanks.

Made of bronze. Listed by A.G.A. testing laboratory. Rating, 355,000 Btu. per hour.

Has non-corrosive thermostatic bellows. Automatically relieves and reseats.

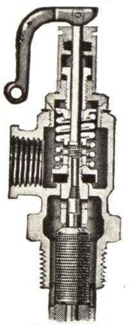
Pressure, 30–150 pounds; standard setting, 125 pounds, temperature, 210° F.

Standard length thermostat.

Size, ¾-inch; ¾-inch I.P.S. male inlet, ½-inch I.P.S. female drain. Weight ⅞ pound.

No. **40A**, Adj.........each **$9.45**

No. **40L**, Adj. Lever.each **10.50**



No. 40L

No. 59 Watts Air Relief Valves

A small, compact, pop relief valve for protection of air compressors and air tanks of small capacities.

All brass throughout.

Adjustable; pressure, 25–200 pounds.

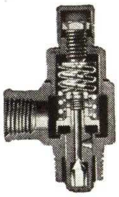
Standard setting, 100 pounds. Size, ¼ inch.

Weight, ¼ pound.

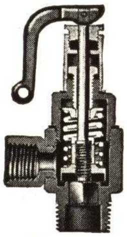
No. **59**.....................................each **$1.20**

No. 53 Watts Pressure Relief Valves

Poppet Type



No. 53A



No. 53L

An all-bronze valve for the protection of equipment against excessive pressure. Used on air compressors, air tanks, and on domestic range boilers and storage tanks. Can be used as a by-pass relief valve on pump discharge lines.

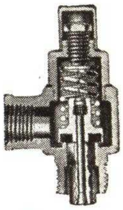
Pressure, 30–150 pounds; standard setting, 125 pounds; ⅜-inch I.P.S. female drain.

Weight of ½-inch size, ⅝ pound; ¾-inch, ¾ pound.

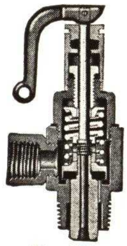
	Adjustable	Adjustable Lever
No.	53A	53L
½-Inch I.P.S. Male Inlet.......each	**$2.76**	**$3.60**
¾-Inch I.P.S. Male Inlet.......each	**3.00**	**3.84**

No. 54 Watts Pressure and Temperature Relief Valves

Poppet Type



No. 54A



No. 54L

For use on hot water supply tanks. Made entirely of bronze.

Valve must be installed either directly on tank or in hot water line as close to tank as possible. Pressure, 30–150 pounds. Standard setting, 125 pounds. Temperature, 212°.

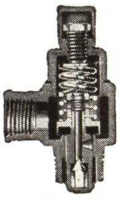
Two extra fusible plugs are furnished with each valve.

Size.....inches	½	¾
No. 54A, Adjustable.....each	**$3.24**	**$3.48**
No. 54L, Adjustable Lever.....each	**4.08**	**4.32**
No. 54A5, Extra Plugs.....each	**.21**	**.21**
Weight.....pounds	⅝	¾

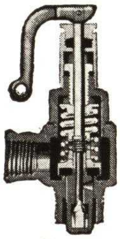
Series 67 Watts Bronze Relief Valves

Poppet Type

Range 30-150 Pounds—Standard Setting 125 Pounds



No. 67A



No. 67L

A pressure, temperature, and vacuum relief valve for protection of domestic hot water tanks.

Temperature protection is by means of a fusible plug. Vacuum valve is built into valve guide stem.

Size, ½-inch; I.P.S. male inlet, ½-inch; female drain, ⅜ inch. Weight, ⅝ pounds.

Two extra fusible plugs are included with each valve.

No. 67A, Adjustable.....each	**$3.78**
No. 67L, Adjustable Lever.....each	**4.52**
No. 54A5, Fusible Plug.....each	**.20**

No. 530C Watts Calibrated Relief Valves

Poppet Type

Range: 25-175 Pounds—Standard Setting 125 Pounds
Calibrations: 25 to 175 Pounds

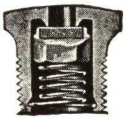
For pressure relief only. No test lever needed. Valve can be tested by turning adjusting cap counter-clockwise until water runs from valve, and then turned down to original setting. Equipped with locking device.

Valve has calibrated pressure adjustment scale. Can be quickly set to required relieving pressure without the use of a gauge.

All brass construction.

Size.....inches	½	¾
No. 530C.....each	**$2.63**	**2.84**
I.P.S. Male Inlet.....inches	½	¾
I.P.S. Female Drain.....inches	⅜	⅜
Weight.....pounds	⅝	¾

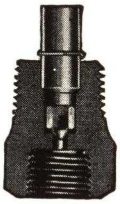
No. 32 Watts Vacuum Relief Valves



For vacuum relief of range boilers and for use with Nos. 40, 54 and 31 series relief valves where temperature, pressure and vacuum protection is required. Body made of brass.

Operates on 7-inch vacuum.
Size, ½ inch.
Weight, ⅛ pound.
No. **32**.....each **$1.26**

No. 68 Watts Vacuum Relief Valves

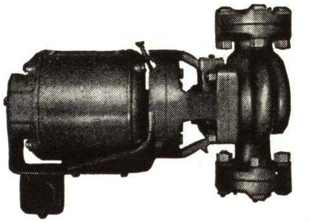


A metal seated vacuum relief valve designed to operate on the slightest vacuum (limited capacity). Provided with tapping for drain pipe connection.

Has ½-inch I.P.S. male inlet and ⅜-inch female drain.

No. **68**, Weight, ¼ Pound.....each **$1.58**

B&G Boosters



Oil lubricated. The 110-volt, 60-cycle motor is equipped with an overload circuit breaker which eliminates any possibility of a burned out motor.

Has iron body.

Size No.	Each	Face to Face Inches	Flanged Pipe Size Inches	Motor Hp.	Delivery GPM.	E.D.R. Sq. Ft. at 150 BTU.	Ship. Wt. Lb.
H1	**$56.10**	8½	1	⅙	25	750	55
H1¼	**61.88**	8½	1¼	⅙	35	1000	56
H1½	**65.18**	8½	1½	⅙	47	1750	57
H2	**72.60**	8½	2	⅙	70	3500	62
H2½	**103.40**	9¼	2½	¼	118	4500	85
HHD3	**128.70**	12	3	⅓	147	5500	124

B & G Motorized Valves

Flanged Ends—For Hot Water Systems Only

• A straightway valve for zoned hot water heating systems as a positive control of boiler water flow. Opens in few seconds; uses no current when open or closed.

Also used in gravity hot water systems to shut off the flow of boiler water when heat is not needed in the radiators.

Valve can be installed in either vertical or horizontal pipes and in any position except upside down. Has auxiliary low voltage switch.

Transformer is furnished separately at no extra cost.

Size Inches	2-Wire Unit No.	2-Wire Unit Each	3-Wire Unit No.	3-Wire Unit Each	Shipping Wt., Lb.
1	2M1	**$60.50**	3M1	**$56.87**	23
1¼	2M1¼	**63.34**	3M1¼	**61.71**	23
1½	2M1½	**70.18**	3M1½	**66.55**	27
2	2M2	**75.02**	3M2	**71.39**	27

Special voltages: 220 volts, 60 cycles, $2.20 extra; 110 volts, 25 or 40 cycles, $5.50 extra; 220 volts, 25 or 40 cycles, $7.70 extra.

B & G Air Cushion Compression Tanks

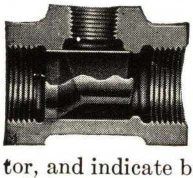
For use on closed hot water heating systems.

Can be installed either in the basement or any convenient place in the system. To be installed on the ceiling only.

No.	**15**	**18**	**24**	**30**	**40**
Each	**$13.10**	**14.70**	**18.00**	**20.50**	**24.00**
Capacity.....gallons	15	18	24	30	40
*Radiation Cap.....feet	300	500	1000	2000	3000
Tank Size.....inches	12x30	12x36	12x48	12x60	13x71
Approx. Ship. Weight...lb.	31	35	44	56	68

*Capacities are based on forced circulation and small pipe sizes. On old systems use next larger size tank.

B&G Cast Iron and Copper Monoflo Fittings



Designed to induce flow into radiators without penalizing pump with excessive resistance. Maintains a uniform distribution of hot water to radiators, regardless of position.

In ordering specify feed or return, whether for up-fed or down-fed radiator, and indicate branch tapping size.

Prices upon application.

Branch Tapping Size Inches	For Radiation Above Main		For Radiation Below Main	
	Supply No.	Return No.	Supply No.	Return No.
1x½ or ¾	SA-1	RA-1	SB-1	RB-1
1¼x½, ¾ or 1	SA-1¼	RA-1¼	SB-1¼	RB-1¼
1½x½, ¾ or 1	SA-1½	RA-1½	SB-1½	RB-1½
2x½, ¾ or 1	SA-2	RA-2	SB-2	RB-2
2½x½, ¾, 1 or 1¼	SA-2½	RA-2½	SB-2½	RB-2½
3x½, ¾, 1 or 1¼	SA-3	RA-3	SB-3	RB-3

B & G Flo-Control Valves

For Use with Heating Systems

Straight Pattern

Angle Pattern

Used in forced circulation hot water heating systems to prevent the circulation of hot boiler water when pump is not in operation and heat is not needed in the radiators. This permits year-round operation of an indirect water heater as well as providing a method of maintaining a uniform room temperature during heating system. Will work on open or closed systems.

Straight pattern valve is hinged so it is forced open when the booster starts. This valve is used when a straight run of pipe offers the most convenient location. Should not be installed in a vertical pipe.

Radiation Capacity, Square Feet

Btu.	Valve Size, Inches					
	1	1¼	1½	2	2½	3
150	750	1000	1750	3500	4500	5500
200	562	750	1312	2625	3375	4125
240	469	675	1094	2187	2820	3437

Angle Pattern

Screwed

No.	Each	Size In.	*Height Overall Inches	*Face of Inlet to Ctr. of Outlet Inches	*Center of Inlet to Face of Outlet Inches	Wt. Lb.
A1	**$7.38**	1	5⅜	2 7/16	1 13/16	4
A1¼	**9.36**	1¼	5⅜	2 7/16	1 13/16	4
		Flanged				
A1½	**$12.32**	1½	7⅞	4⅝	3 15/16	18
A2	**14.86**	2	8 1/16	4⅞	4⅛	22
A2½	**19.80**	2½	9 13/16	5⅜	5	33
A3	**33.00**	3	10½	6 7/16	5 11/16	43

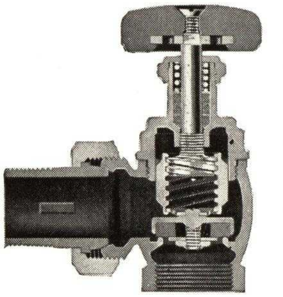
Straight Pattern

Screwed

No.	Each	Size In.	End to End Inches	Height Overall Inches	Wt. Lb.
S1	**$7.38**	1	4¾	3⅞	5
S1¼	**9.36**	1¼	4¾	3⅞	5
†S1½	**12.32**	1½	7⅜	6	17
		Flanged			
S2	**$14.86**	2	9¾	6⅝	25
S2½	**19.80**	2½	10½	7 3/16	33
S3	**28.06**	3	12⅜	7 15/16	53

*Includes companion flanges on flanged patterns.
†Screwed one end, flanged one end.

Arco Packless Radiator Valves



These valves cannot leak. They are permanently tight against the passage of water, steam or even air.

The Leakproof feature is a special molded ring with metal core held under compression by spring.

The non-breakable composition handle will not work loose. One smooth turn opens or closes valve.

Has renewable composition disc of highest quality.

Angle

Size Inches	Price Each No. **999** Steam
½	**$3.70**
¾	**4.30**
1	**5.10**
1¼	**6.40**
1½	**8.40**

No. 999, Angle

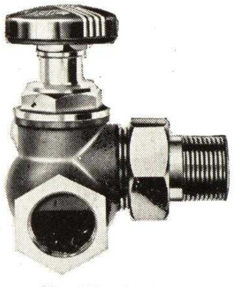
No. 949, Globe

Globe

Size Inches	Price Each No. **949** Steam
½	**$3.70**
¾	**4.30**
1	**5.10**
1¼	**6.40**
1½	**8.40**

Corner

Size Inches	Price Each No. **945** R. H. Corner	Price Each No. **941** L. H. Corner
½	**$4.10**	**$4.10**
¾	**4.75**	**4.75**
1	**5.60**	**5.60**
1¼	**7.05**	**7.05**
1½	**9.25**	**9.25**



No. 945, Corner

No. 995 Graduated

No. 995 Graduated

The fractional type Arco Packless Valve is the same as the steam type except with lever handle and dial equipment and the calibrating cone on disc.

The calibrating cone is shaped to give accurate control of vapor flow.

The maximum port opening can be permanently adjusted after installation. The stop fastened to the dial can be moved to the required position by loosening cap.

Size Inches	Price Each
½	**$3.70**
¾	**4.30**
1	**$5.10**
1¼	**6.40**

No. 993 Arco Packless Radiator Gate Valves

For steam.

Employs the packless principle of molded rings under spring compression. This feature prevents leaks and eliminates repacking. Can be drilled with circulating hole for use on hot water systems.

With union. Round handle.

All threads right hand.

In satin nickel finish with polished trimmings.

Size.................inches	½	¾	1	1¼	1½
No. 993.............each	**$3.65**	**4.25**	**5.20**	**6.60**	**9.00**

No. 375 Ideal Convector Gate Valves

For Steam and Hot Water

Designed especially for convector type radiator installations.

Can be drilled for circulating hole when used for hot water.

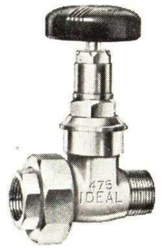
The male thread is screwed directly into convector before convector is placed in recess. Tail-piece which is provided with a hex on the outside and a female thread on the inside is screwed onto stub. When convector is placed in position it is only necessary to tighten tail nut. No short nipples or unions are needed.

Rough brass finish with black, non-heating handle.

Size.................inches	½	¾	1	1¼
No. 375.............each	**$3.65**	**4.25**	**5.20**	**6.60**

No. 475 Ideal Packless Convector Gate Valves

For Steam and Hot Water



A compact straightway valve to fit the restricted space ordinarily available between convector radiator and floor.

Can be drilled for circulating hole when used for hot water.

Quality construction throughout. Special leakproof feature.

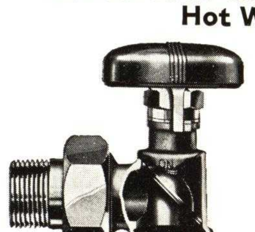
Screw outside iron pipe thread directly into convector before setting in position; the tail-piece is screwed on to the riser stub.

When convector is placed in position, it is only necessary to tighten tail nut.

Satin nickel finish.

Size.................inches	½	¾	1	1¼
No. 475.............each	**$3.65**	**4.25**	**5.20**	**6.60**

No. 901 Arco Quick Opening Packless Hot Water Valves



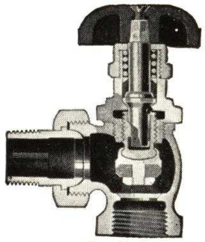
Swinging plate cuts away corrosion and deposit, keeps inside of valve clean, prevents sticking, and its concave shape reduces friction. Non-leaking packless construction. An adjustable stop for equalizing water flow, making it possible to adjust the area of opening after installation. This is done by loosening the stem cap and turning stop so that valve can be opened only to desired point, thus increasing or decreasing the circulation to any radiator and balancing the system.

Round handle. With union. All threads are right hand. Satin nickel finish. Polished trimmings.

Size.................inches	½	¾	1	1¼	1½
No. **901** Round Handle...ea.	**$3.25**	**3.70**	**4.50**	**5.75**	**7.30**

No. 80 Hoffman Brass Packless Radiator Valves

Reinforced—Quick-Opening Cone Disc



Angle

With bakelite wheel.

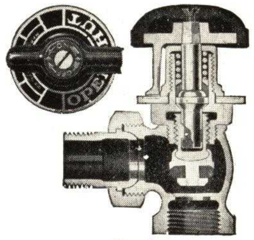
Lock shield is 5 per cent extra.

Key for lock shield is 25 cents.

Size.................inches	½	¾	1	1¼	1½
Angle Pattern.........each	**$2.70**	**$3.14**	**$3.72**	**$4.66**	**$6.12**
Globe Pattern.........each	**3.57**	**4.14**	**4.91**	**6.16**	**6.63**

No. 85 Hoffman Brass Packless Radiator Valves

Reinforced—Modulating Cone Disc



Angle

With bakelite wheel handle.

Lock shield is 5 per cent extra.

Key for lock shield is 25 cents.

Size.......................inches	½	¾	1	1¼
Angle Pattern...............each	**$2.96**	**$3.42**	**$4.07**	**$5.10**
Globe Pattern...............each	**3.83**	**4.44**	**5.27**	**6.60**

Detroit Circulator Radiator Valves

With Sweat Connection for Copper Pipe

No. 216, Angle—No. 217, Straight

No. 216, Angle

A packed valve, for forced hot water systems, that opens smoothly and easily.

Valve inlet has a sweat connection for copper pipe, together with threaded male union for radiator connection.

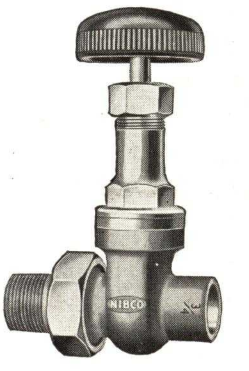
The flat, vane end of valve stem fits tightly in the body, in contact with sides of wall, and as handle is turned scrapes away any dirt or scale.

Brass finish. Has visible stop for off or on position.

Furnished in two types, angle or straight,

Sweat Connection...........inches	⅜	½	¾	1
Male Union.................inches	½	½	¾	1

No. 770 Nibco Bronze Radiator Gate Valves



125 Pounds Steam Working Pressure
Copper to Male Union

Double disc, rising stem, positive seating, steam bronze metal, packing friction gland, composition handwheel, no friction stem threads.

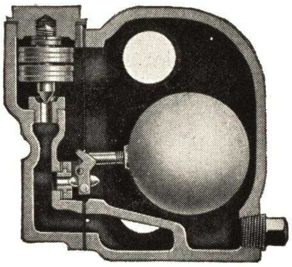
When ordering, specify whether for steam or hot water lines.

Tail-piece furnished with inside assembly lugs.

Nominal

Size....in.	⅜	½	¾	1
No. **770**..ea.	**$3.65**	**3.80**	**4.90**	**6.10**

Series 50 Hoffman Float and Thermostatic Traps



Entire working mechanism is mounted on the cover, which may be easily removed as all piping connections are on the body.

Equipped with bellows type thermostatic element for air by-pass with stainless steel valve having a non-corrosive, renewable seat.

Mechanism has a limit stop on bronze float lever, bronze fulcrum bracket and seat retainer, water sealed float valve and seat, and stainless steel reversible valve and valve seat.

Furnished with ample discharge chamber for air and water, a sediment pocket, a clean-out plug, and a non-collapsible spherical seamless copper float.

Inlet and outlet connections are horizontal on both sides of body.

Low Pressure Type

Float and Thermostatic No.	Float and Thermostatic Each	*Mechanical No.	*Mechanical Each	Conn. Size Inches	Capacities in Pounds of Water per Hour — Pressure Differentials in Pounds per Sq. In. ¼	½	¾	1	2	5	10	15	Shipping Weight Pounds
53-V	$11.50	53-M	$10.00	¾	70	100	120	140	200	210	220	230	7⅛
54-V	14.25	54-M	12.75	1	175	250	300	350	500	525	550	575	7⅛
56-V	17.50	56-M	16.00	1¼	425	600	735	850	1200	1260	1320	1380	12⅝
57-V	35.00	57-M	33.50	1½	850	1200	1470	1700	2400	2520	2640	2760	19⅝
58-V	50.00	58-M	48.50	2	1775	2500	3060	3550	5000	5250	5500	5750	37¾

Medium and High Pressure Types

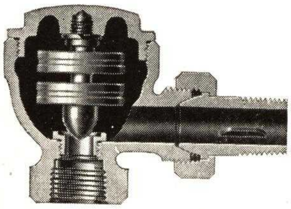
Float and Thermostatic No.	Float and Thermostatic Each	*Mechanical No.	*Mechanical Each	Conn. Size Inches	Capacities in Pounds of Water per Hour — Pressure Differentials in Pounds per Sq. In. ½	1	2	5	10	15	20	25	30	40	50	60	70	80	90	100	125	Shipping Weight Pounds
540-T	$18.00	540-M	$16.00	¾ or 1	300	405	530	890	1210	1485	1705	1885	2010	....	....	....	....	....	....	....	....	7⅛
541-T	18.00	541-M	16.00	¾ or 1	195	265	360	580	770	990	1110	1210	1290	1430	1560	1680	....	....	....	....	....	7⅛
542-T	18.00	542-M	16.00	¾ or 1	110	145	200	320	430	520	605	650	690	755	835	880	950	1000	1035	1080	1190	7⅛
560-T	21.85	560-M	20.25	1 or 1¼	600	880	1205	1845	2560	3230	3715	4100	4405	....	....	....	....	....	....	....	....	12⅝
561-T	21.85	561-M	20.35	1 or 1¼	360	485	660	1020	1430	1740	1980	2200	2420	2670	2910	3135	....	....	....	....	....	12⅝
562-T	21.85	562-M	20.35	1 or 1¼	200	250	310	455	635	775	915	1010	1150	1270	1380	1460	1575	1680	1760	1865	2110	12⅝
580-T	56.00	580-M	54.90	1½	2045	2625	3560	5660	7890	9440	10590	11360	12095	....	....	....	....	....	....	....	....	37¾
581-T	56.00	581-M	54.90	1½	1075	1300	1700	2600	3750	4350	4750	5050	5400	5960	6500	6950	....	....	....	....	....	37¾
582-T	56.00	582-M	54.90	1½	550	750	1150	1650	2250	2800	3200	3440	3700	4000	4350	4800	5020	5380	5700	6000	6600	37¾

*Without internal thermostatic air pass.

To obtain capacities in square feet equivalent direct radiation, multiply pounds of water per hour by 4. In estimating pressure differentials on vacuum pump installations, each 2 inches of vacuum equals 1 pound of pressure. Thus, 2 pounds steam pressure and 6-inch vacuum on return equals 5 pounds differential.

No. 17C Hoffman Radiator Steam Traps

15 Pounds Maximum Operating Pressure



Made in angle, swivel and vertical patterns.

Body, cap, nut, and tailpiece are of high quality brass. Thermostat is of non-corrosive alloy.

Pin is of tough, special alloy.

Four diaphragm thermostat has full spring capable of long life under flexings and high temperatures.

Thermostat and seat are both renewable.

Rough brass finish.

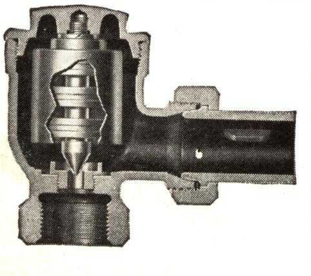
Capacity, 200 square feet, E.D.R.

Shipping weight, 1¾ pounds.

No. **17C**....................................each **$4.00**

Hoffman Radiator Steam Traps

25 Pounds Maximum Operating Pressure



Body, cap, nut, and tailpiece are of high quality brass. Thermostat is of non-corrosive alloy. Pin is of tough, special alloy to resist wear.

The six-diaphragm thermostat has full spring and is capable of long life under flexings and high temperatures.

Thermostat and seat are both renewable.

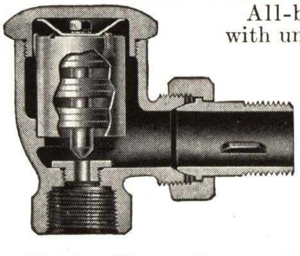
Rough brass finish.

No. **8C**, Angle and Straightway, ¾-inch Connections, Capacity 400 Sq. Ft. E.D.R.; Ship. Wt., 2½ Lb.ea. **$5.60**

No. **9C**, Angle Only, 1-Inch Connections, Capacity 700 Sq. Ft. E.D.R.; Ship. Wt., 2¾ Lb..........ea. **7.20**

Hoffman Thermostatic Steam Traps

Maximum Operating Pressure, 50 Pounds



All-bronze bodies and caps, and with union on inlet.

Thermostats composed of 6 diaphragms of a special non-corrosive alloy which will not soften under temperatures far above those encountered in service, nor crack from repeated action.

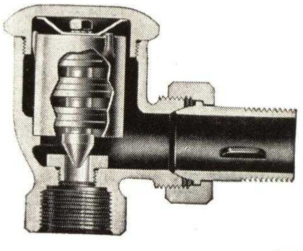
Thermostats are interchangeable. Valve seats renewable.

Weight: No. 8, 1¾ pounds; No. 9, 2 pounds.

No. **8**, Angle Only, ⅜-Inch Connection.........each	**$4.25**
No. **8**, Angle, R.H., L.H., and Straightway, ½-Inch Connection....................................each	**4.25**
No. **9**, Angle Only, ¾-Inch Connection.........each	**7.20**
No. **9**, Angle Only, 1-Inch Connection..........each	**7.20**

Hoffman High Pressure Traps

125 Pounds Maximum Operating Pressure

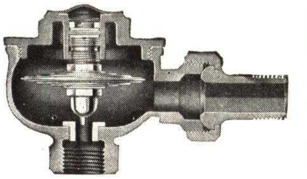


All bronze body and cap, brass union nut and tail piece. Thermostat composed of 6 diaphragms of a special non-corrosive alloy. Thermostat and seat both renewable.

All sizes made in angle pattern. No. 8H, ½-inch size is also made in R.H., L.H. and Straightway.

No.	Each	Cap. Condensate per Hour, Lb. — Working Pressure (Gage) Lb. 25	50	100	125
8H ⅜-Inch	**$6.25**	235	400	550	590
8H ½-Inch	**6.25**	300	490	650	720
9H ¾-Inch	**7.80**	450	650	875	950
9H 1-Inch	**7.80**	625	850	1125	1250

Marsh Thermostatic Radiator Traps



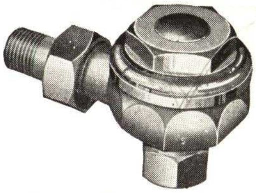
While primarily designed for use as a radiator trap, Marsh Thermostatic Trap may also be used for steam main and riser drips. Also adaptable for use in connection with indirect heating coils, large unit heaters, etc., where a center vent or additional venting is required.

Furnished standard in nickel finish with polished trim. Can also be supplied in natural bronze or chrome finish.

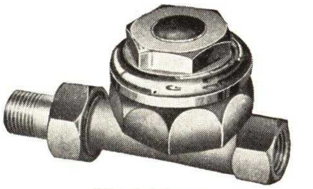
The ½-inch size is supplied in all 6 patterns; the ¾ and 1-inch sizes are supplied in angle, right hand, left hand and back offset patterns complete with union.

Size Connections...inches		½x½		¾x¾		1x1
C. I. Radiation......sq. ft.		200	300	400	600	700
No. **1**	each	**$5.75**	....	....	....	.....
No. **2**	each	....	**$6.85**	....	....	.....
No. **2-4**	each	....	....	**$7.55**	....	**$15.20**
No. **2-7**	each	....	....	....	**$9.20**	.....

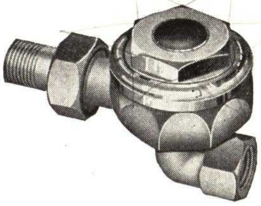
Patterns of Marsh Thermostatic Radiator Traps
Stainless Steel Needle and Seat



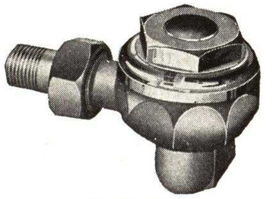
Angle



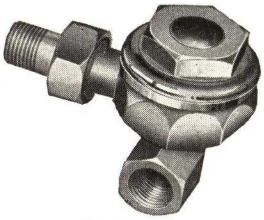
Straightway



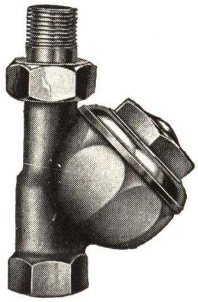
Back Offset



Right Hand



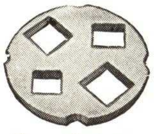
Left Hand



Vertical

4-In-1 Bakelite Valve Handles

Bottom View of Handle with Steel Plate Removed



Turn Plate to Desired Size Opening

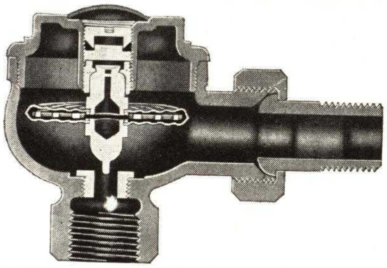
Replace Plate in Handle

This valve handle of molded bakelite can be used on any popular size of radiator valve, gate valve, and any wheel handle valve.

Nos. 1 and 2 will fit four different valve stems. Nos. 3 and 4 will fit four larger sized stems. Nos. 1 and 3, for screw assembly valves. Nos. 2 and 4, for nut assembly valves. Packed 1 dozen in a carton.

Nos. **1** and **2**	each	**$.20**
Nos. **3** and **4**	each	**.30**

Marsh Thermostatic Steam Traps
Medium Pressures—From 15 to 125 Pounds



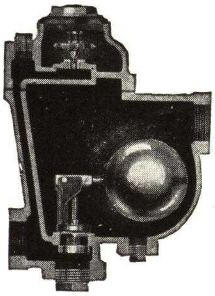
Used to discharge air and condensate from heating coils, and cookers.

Trap body is heavy cast brass with heavy union nut and tailpiece. Diaphragm is heavy spun bronze fitted with internal reinforcing ring, and charged with volatile liquid. Needle and seat of monel metal.

Standard in angle pattern only, but can be furnished in other patterns on special order.

No.	Size Inches	Capacity per Hour—Pounds 35	50	80	100	Each
501	½	90	110	115	130	**$8.00**
502	½	140	160	200	260	**9.50**
502	¾	300	450	490	580	**13.50**
502	1	700	925	1100	1260	**18.00**

No. 8 Marsh Float and Thermostatic Drip Traps



This trap is continuous in discharge and is designed to quickly remove condensation and air from drip points on steam mains, steam risers, steam coils, or blast heaters, or for any like service within the capacity of the trap.

Design permits a deep water seal on the discharge valve. This water discharge valve is float controlled and located at a low point in the bottom of the trap and air is removed through a thermostatically controlled port in the cap of trap.

Normally air is discharged through a port directly to the outlet connection of the trap. In cases where the trap may be required to discharge to a wet return the air discharge may be connected to a dry return from a special opening tapped in the cap of the trap.

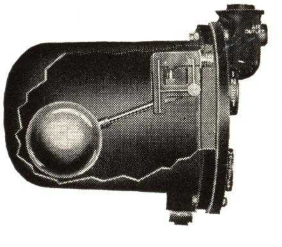
Available in 1¼-inch size provided with one 1¼-inch tapped inlet and two 1¼-inch tapped outlet openings.

All interior parts are of bronze or monel with the exception of the float which is a seamless copper float.

Maximum working pressure, 15 pounds.

Size In.	Each	Capacity in Pounds Water per Hour—Steam Pressure, Pounds ⅛	¼	½	¾	1	2	5	10	15
1¼	**$33.60**	300	425	600	735	850	1200	1260	1320	1380

No. 11 Marsh Air Traps



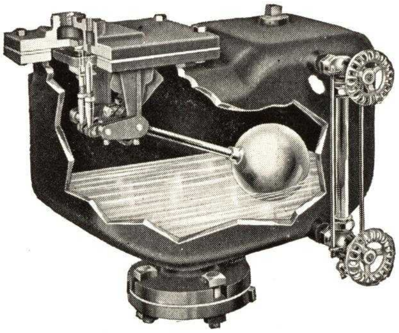
This unit vents the air from the return piping. It also vents the air and exhaust vapor from the return trap. A ball float mechanism permits the escape of air and prevents the leakage of water. A ball check valve prevents re-entry of air.

This trap is made in one size to handle installations up to 10000 square feet of radiation. The body is of cast iron and interior mechanism of non-corrosive metals throughout.

Air outlet, ½ inch; inlet, 1 inch; water outlet, 1 inch.

No. **11**	each	**$24.00**

Marsh Boiler Return Traps



A boiler return trap is required on any 2-pipe vapor system. It performs two functions—that of returning condensate to the boiler and of maintaining a dry return line to alloy free venting of air from the system and radiation at all times.

Seeking its own level, condensate accumulates in the boiler return trap. A float in the trap rises. By means of a main weight and idler weight 2 cam rods are actuated simultaneously. One cam unseats a valve, opening an inlet connected directly with the boiler header. This allows steam to enter the trap. The other cam shuts off an exhaust connection to the return system. Pressure of boiler has thus been introduced into the trap and makes it possible for the accumulated condensate to flow freely into boiler.

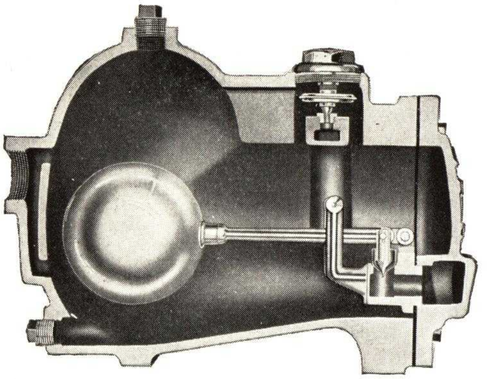
When the water level recedes, the float and lever actuate the weights and cams in the opposite direction closing off the inlet port from the boiler and opening the exhaust valve. Steam is vented and the cycle begins again. It is repeated as long as the system is in operation and functions noiselessly. Steam inlet, ¾ inch; exhaust, ½ inch.

For installations having more than 10000 square feet of direct radiation, 2 or more Marsh Boiler Return Traps can be connected in series, details for which will be furnished upon request.

No.	10	10-A	10-B	10-C	10-D	10-E
Each	$69.12	118.20	178.80	214.80	262.80	262.80
Radiation..sq. ft.	1500	2000	4000	6000	8000	10000
Trap Inlet.....in.	2	2	2	2½	2½	2½

No. 14 Marsh Float and Thermostatic Drip Traps

Heavy Duty



Designed to handle large volumes of water and air and for service on air heating coils, hot water and storage heaters, steam heaters, large steam mains, etc.

Trap is of the continuous discharge type. Condensation discharge is through a ball float mechanism. Air is removed through a by-pass cast integral with the body. This by-pass, which leads into the outlet connection, is provided with a thermostatic by-pass element. By-pass is provided with removable brass seat.

Body and cover are of heavy cast iron. Heavy bosses are cast into the body at all connection and tapped openings. The entire float mechanism is of non-corrosive metal and is attached to the trap cover. Connections are provided for in the trap body so that piping need not be disturbed in removing the cover.

Provided with a tapped opening in the top of the float chamber. This opening is tapped one pipe size smaller than the main trap connection and may be used for minor drips or as an equalizing connection. The trap body is provided with a tapped blow-off opening.

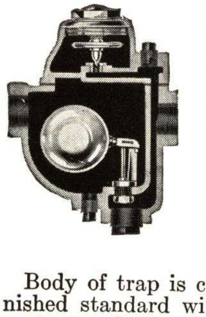
Maximum working pressure, 15 pounds per square inch.

Trap can be provided with water gauge glass, if specified.

Size In.	Each	Capacity in Pounds Water Per Hour — Steam Pressure, Pounds ⅛	¼	½	¾	1	2	5	10	15
1½	$80.00	600	850	1200	1470	1700	2400	2520	2640	2760
2	80.00	1250	1775	2500	3060	3550	5000	5250	5500	5750

Rating are in accordance with standards adopted by the Steam Heating Equipment Manufacturers Association, providing for the continuous elimination of air when trap is operating at its maximum rating.

No. 12 Marsh Float and Thermostatic Drip Traps



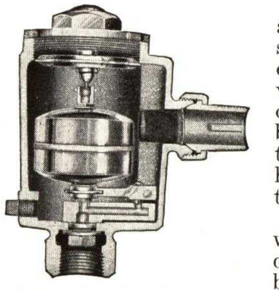
Designed for removal of air and condensation from short steam mains, branches or risers. Unit heaters, steam coils, etc., are within the limits of the capacity of the trap. The size and weight of the trap permits installation in the piping without any other means of support. Condensation is removed through a float operated valve. Air vent is located in a by-pass in the cap of the trap. Air passes through a passageway and out through trap outlet.

Body of trap is cast iron. Available in 1-inch size furnished standard with one inlet and outlet. All interior parts are of steam bronze, copper and monel metal.

Maximum working pressure, 15 pounds per square inch.

Size In.	Each	Capacity in Pounds Water per Hour] — Steam Pressure, Pounds ⅛	¼	½	¾	1	2	5	10	15
1	$24.00	125	175	250	300	350	500	525	550	575

No. 17 Marsh Float and Thermostatic Traps



Designed for removal of air and condensate from short steam mains, branches or risers; desirable for installation on unit ventilators, small unit heaters, or other equipment which may be subjected to freezing temperatures during periods when the heating system is not in operation.

A brass removable strainer, which is installed in the inlet connection and can be removed by disconnecting the union tail piece nut, prevents any possibility of dirt and grease fouling the mechanism.

Male I.P. union inlet and female I.P. outlet, ½ inch.

Trap may be readily suspended on the piping itself with no other means of support required.

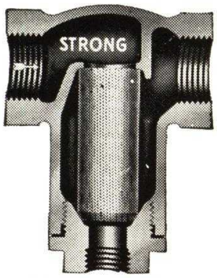
Interior parts are of bronze and monel metal with the exception of the float which is a seamless copper float tested for a working pressure of 15 pounds per square inch.

Size In.	Each	Capacity in Pounds Water per hour — Steam Pressure, Pounds ⅛	¼	½	¾	1	2	5	10	15
½	$16.00	50	70	100	120	140	200	210	220	230

Strong Quick-Cleaning Strainers

Extra Heavy Semi-Steel

For Pressures up to 250 Pounds at 450°F.



Type SL, Screwed

Type FL, Flanged

Strainers installed in steam, gas, air or water lines catch grit and sediment, thus increase life and efficiency of valves, regulators, traps or other control apparatus. Self-cleaning construction; foreign matter is caught inside strainer cylinder and may be blown off without removing screen or shutting down the line. Strainer should be equipped with blow-off valve to remove grit and scale. The area of cylinder perforations is several times pipe area. Fitted with 1/64-inch perforated brass screen. Screens also available with larger perforations and in steel, monel, stainless steel, filter or wire cloth.

For monel screen, add difference between brass and monel screen price.

Flanging is 250-pound standard with 125-pound flanges available on order at same price. Companion flanges furnished on order only at extra cost.

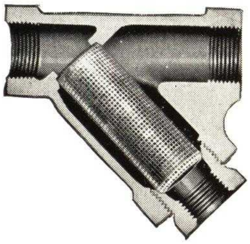
	Screwed			Flanged			Screens	
Size In.	Each	Inlet-Outlet In.	Wt. Lb.	Each	Face to Face In.	Wt. Lb.	Brass Each	Monel Each
¼	$2.35	2¾	1½	.....	....	..	$1.35	$2.00
⅜	2.35	2¾	1½	.....	....	..	1.35	2.00
½	2.70	3¼	2½	.....	....	..	1.35	2.00
¾	2.85	3¼	2½	.....	....	..	1.35	2.00
1	3.70	4	3½	.....	....	..	2.00	2.50
1¼	5.25	5	8	$18.50	6½	15	2.10	2.75
1½	7.00	5	8	22.00	7	19	2.40	3.00
2	10.00	6	16	30.00	7½	27	3.75	4.50
2½	17.00	7⅛	21	33.00	8¾	39	4.50	6.00
3	21.00	8½	26	35.00	10⅜	53	5.25	8.00
4	.....	...	....	62.00	12¼	106	7.00	12.50

Hoffman Self-Cleaning Dirt Strainers

Maximum Pressure 125 Pounds

Protects the seating surfaces of traps, reducing valves, etc., from excessive wear and faulty operation due to scale and grit.

For steam work, furnished with brass strainer cylinders. Cast iron body, and screwed connections.



Size In.	Each	Clean-out In.	Lgth. In.	Strainer Cylinder Max. Lgth. In.	Wt. Lb.
½	$2.25	⅜	3 15/32	3	1¼
¾	2.65	½	4⅛	3 7/16	2
1	3.70	¾	4¾	4 1/16	3¼
1¼	3.65	1	5 7/16	4½	4½
1½	4.25	1¼	6 3/16	5 5/16	7
2	7.20	1½	7 7/16	6⅛	10¾

No. 886 Brass Strainers

I.P.S. Inches	Each	I.P.S. Inches	Each
⅜	$.30	1½	$1.20
½	.40	2	2.00
¾	.50	2½	3.50
1	.60	3	4.00
1¼	.75	...	....

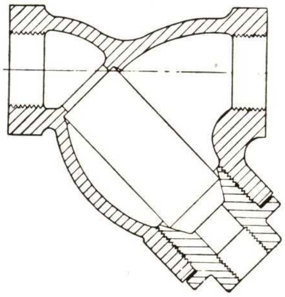
Strong Quick-Cleaning Strainers

Used on pressures above 250 pounds and temperatures above 450°F. on steam service. Standard screen furnished is 1/64-inch perforated monel with area of perforations at least 2½:1 in relation to pipe area. Cylinders are 1/64 inch thick and number of holes per square inch will vary from 625 to 225 depending on pipe size.

Screens available in steel, stainless steel, wire cloth and filter cloth in various size perforations; prices and information upon request.

Type LYS, Screwed

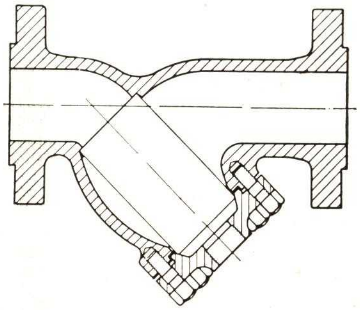
For 400 Pounds Pressure at 750°F.
For 500 Pounds Pressure at 500°F.
For 600 Pounds Pressure Cold Water, Non Shock



Size Inches	Each	Monel Screen Each	End to End Inches	Weight Pounds
¼	$9.60	$2.00	3	1¼
⅜	9.60	2.00	3	1¼
½	15.25	2.00	3 13/16	2
¾	19.00	2.00	4⅜	3¾
1	21.75	2.50	5	5
1¼	24.00	2.75	5⅝	7
1½	29.00	3.00	6¼	11
2	43.00	4.50	7½	17
2½	.....	6.00	...	....
3	.....	8.00	...	....
4	.....	12.50	...	....

Type LYF, Flanged

For 300 Pounds Pressure at 750°F.
For 375 Pounds Pressure at 500°F.
For 500 Pounds Pressure Cold Water, Non Shock



Series 30

Size Inches	Each	Monel Screen Each	Face to Face Inches	Weight Pounds
½	$22.50	$2.00	5⅛	6
¾	29.00	2.00	5⅞	9
1	36.75	2.50	6⅞	13
1¼	48.00	2.75	7⅞	18
1½	59.25	3.00	9⅜	31
2	70.50	4.50	11⅛	36
2½	88.00	6.00	12⅝	53
3	120.00	8.00	13⅝	73
4	192.00	12.50	16⅝	131

Series 15, 40 and 60 American Standard flanges available up to 3 inches at same price.

Sizes from 4 to 8 inches with various flanges available, prices upon request.

Armstrong Inverted Bucket Steam Traps
Cast Semi-Steel—For Low and Medium Pressures
Bottom Inlet Series

No. 211

No. 212

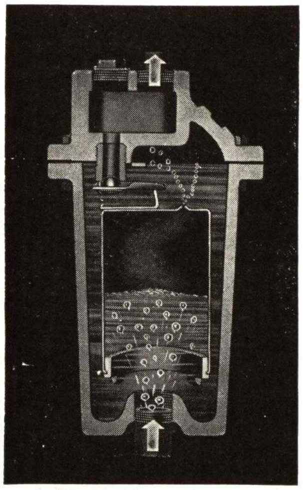
No. 213

No. 214

No. 215

No. 216

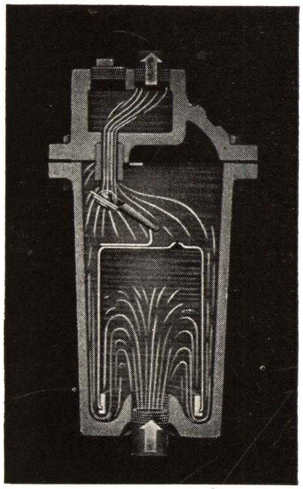
No.	211	212		213		214	215		216	
Pipe Connections . . . . inches	½	½	¾	½	¾	1	1	1¼	1½	2
Regular Trap . . . . each	**$9.25**	**$15.00**	. . . . .	**$20.75**	. . . . .	**$29.00**	**$38.00**	. . . . .	**$55.00**	. . . . .
Blast Trap . . . . each	**10.75**	**17.00**	. . . . .	**22.75**	. . . . .	**31.50**	**40.50**	. . . . .	**60.00**	. . . . .
Regular Trap, with Check Valve . . . . each	**13.25**	**19.00**	. . . . .	**24.75**	**$26.75**	**37.00**	**46.00**	**$48.00**	**67.00**	**$70.00**
Maximum Pressure . . . . pounds	250	250	250	250	250	250	250	250	250	250
Weight . . . . pounds	5½	10½	10½	19	19	32	47	47	80	80

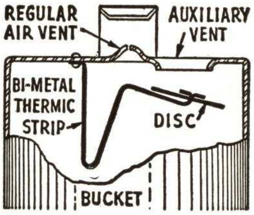

Steam Floats Bucket Closing Off Trap

Continuous Discharge Capacity in Pounds of Water per Hour at 250 Pounds Maximum Pressure

Pressure Pounds	No. 211	*No. 212	No. 213	No. 214	No. 215	No. 216
5	830	1600	2900	4800	7600	14500
10	950	1900	3500	5800	9000	17300
15	1060	2100	3900	6500	10000	19200
20	880	1800	3500	6000	8500	18500
25	950	1900	3800	6500	9200	20000
30	1000	2050	4000	6800	9800	18000
40	770	1700	3800	5800	8300	20000
50	840	1900	4100	6300	9000	18200
60	900	2000	4400	6800	9500	19800
70	950	2200	3800	6000	9200	18300
80	800	1650	4000	6400	9700	19000
90	830	1730	3400	5900	10000	17500
100	860	1800	3600	6200	10400	18000
125	950	2000	3900	6700	10900	20000
150	810	1500	3500	5700	9500	18500
200	860	1600	3200	5300	9200	17500
250	760	1300	3500	5700	7000	19000

*In 200 to 250-pound range, furnished with ½-inch pipe connection.


Condensate Displaces Steam, Opening Trap

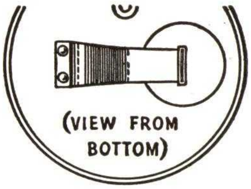


For Blast Trap Service

All Armstrong Traps are readily convertible into blast type traps merely by using buckets equipped with the patented auxiliary thermic air vent.

As shown in the sketches, the mechanism for this vent consists of a stainless steel disc slotted to receive the end of a bi-metal strip. Different coefficients of expansion in the bi-metal cause it to bend down when cold and up when hot. Normally, it is set to close at 212°, but it can be set to close at higher temperatures.

Capacity: 50 to 100 times as much air handling capacity as regular traps.



Buyers Guide

A Check List for Traps:	The Armstrong Steam Trap
1. Ability to draw off air	An Armstrong Trap will not air bind. A thermic bypass can be furnished where large volumes of air must be removed promptly.
2. Ability to handle hot condensate	Will handle condensate regardless of temperature. No cooling leg required.
3. Ability to handle all ordinary sediment and sludge	The Armstrong Trap is self-scrubbing. Sludge and sediment are discharged with the condensate.
4. Freedom from wire-drawing in orifice	Heat treated chrome steel valve parts are highly resistant to wire-drawing.
5. No steam loss for any load condition	Discharge orifice always water-sealed against steam loss.
6. Ability to hold tight against vacuum	Long life valve parts and water seal prevent steam from getting into vacuum return line.
7. Freedom from wear	Working parts made of highest quality material available.
8. Small size—light weight	Small size and light weight made possible by efficient leverage system.
9. Simple construction	Standard trap has only two moving parts—lever assembly and inverted bucket.
10. Large capacity	For evidence, see Capacity Chart which shows hot condensate figures. Cold water capacity figures would be almost twice as great.

No. 811

No. 813

No. 801

Armstrong Inverted Bucket Steam Traps

Cast Semi-Steel—For Low and Medium Pressures

Side Inlet Series

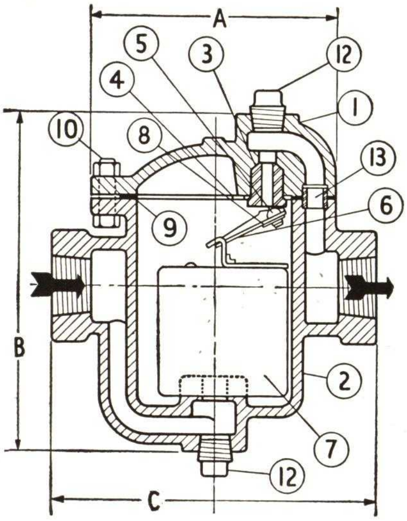
No.	800	811	812	813	801
Pipe Connections...........inches	½, ¾	½, ¾	½, ¾	¾, 1	½, ¾
Regular Trap..................each	$7.00	$10.00	$16.00	$22.00	$7.00
Blast Trap......................each	8.50	11.50	18.00	24.00	8.50
Regular Trap, with Check Valve.ea.	11.00	*14.00	*20.00	†28.00	11.00
Maximum Pressure.........pounds	250	250	250	250	250
Weight......................pounds	4½	5½	13½	25	4½

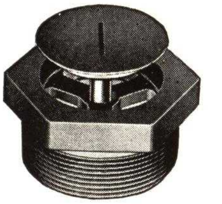
Continuous Discharge Capacity in Pounds of Water per Hour at 250 Pounds Maximum Pressure

Pressure Pounds	No. 800	No. 811	No. 812	No. 813	No. 801
5	450	830	1600	2900	450
10	560	950	1900	3500	560
15	640	1060	2100	3900	640
20	690	880	1800	3500	690
25	460	950	1900	3800	460
30	500	1000	2050	4000	500
40	550	770	1700	3800	550
50	580	840	1900	4100	580
60	635	900	2000	4400	635
70	660	950	2200	3800	660
80	690	800	1650	4000	690
90	620	830	1730	3400	620
100	640	860	1800	3600	640
125	680	950	2000	3900	680
150	‡	810	1500	3500	‡
200	‡	720	1200	3200	‡
250	‡	760	1300	3500	‡
...	...	...	....	....	...

*For ½-inch—†for ¾-inch pipe connections; other sizes, prices upon request.

‡Not regularly furnished for pressure above 125 pounds to avoid small orifices that might plug up with dirt.

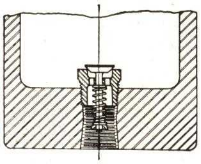




Check Valves

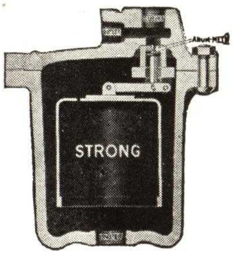
All stainless steel internal type check valves can be used with all standard Armstrong forged steel and cast semi-steel traps.

Size In.	Each	Size In.	Each
½	**$4.00**	**1¼**	**$10.00**
¾	**6.00**	**1½**	**12.00**
1	**8.00**	**2**	**15.00**



Series 80 Strong Semi-Steel Steam Traps

Inverted Bucket Type



An inverted bucket type trap is widely preferred for general drainage work because of its dependable operation.

Bottom inlet design keeps dirt in suspension till it is discharged with condensate, resulting in a self cleaning action. Dual outlet simplifies piping with either outlet used for discharge.

Improved bolted seat design assures an absolutely tight joint and easy removal even after years of service.

Anum-Metl valve and seat are guaranteed leakproof for one year. Bucket and internal parts are stainless steel.

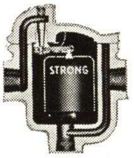
No.	Each	*Pipe Size Inches	†Continuous Flow Capacity Pounds Water per Hour, Pressure, Pounds 30	125	200	250	Height Inches	Weight Pounds
80	**$17.00**	½	3800	1560	850	900	8	15
81	**22.50**	¾	8100	3300	2435	2070	9½	26
82	**30.00**	1	16000	6100	4600	3700	10⅞	39
83	**37.00**	1¼	21200	10200	7600	6500	12	48
84	**55.00**	1½	36000	15400	11480	11000	14¼	77
85	**73.00**	2	70000	32000	23000	20000	16½	117

*May be tapped next larger size on order. State pressure rating required.

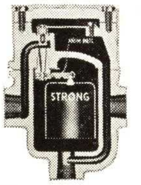
†Use a safety factor in sizing.

Series 70 Strong Semi-Steel Steam Traps

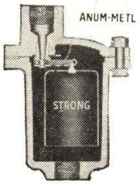
Inverted Bucket Type



Nos. 170, 271, 272



Nos. 170-T, 271-T, 272-T



No. 171

For draining unit heaters, cookers, pressing machines, pipe coils, riser drips, etc. Hi-Cap orifice is a modified venturi having up to 25 per cent greater capacity, size for size, than former types. Inlet-outlet location places trap below level inlet pipe at all times. Working parts removable from top without breaking pipe connections.

The T, thermal type, is a two-in-one trap (blast principle) combining the economies of inverted bucket design with air removal feature of the thermal by-pass. Trap is leakproof because of Anum-Metl valve and seat. All stainless trim including bucket.

No.	Each	*Pipe Size Inches	†Continuous Flow Capacity Pounds Water per Hour, Pressure Pounds 30	125	150	200	250	Height Inches	Wt. Lb.
170	**$8.00**	½–¾	1460	1150	875	695	....	6	6
‡170-T	**11.00**	½–¾	1460	1150	875	....	....	7⅛	7
271	**17.00**	¾–1	5160	2400	2005	1360	1500	8½	15
‡271-T	**22.00**	¾–1	5160	2400	2005	....	....	10⅛	17
272	**23.00**	1–1¼	11160	4560	4140	3400	3180	10⅜	25
‡272-T	**29.00**	1–1¼	11160	4560	4140	....	....	12⅜	28
171	**10.50**	½–¾	2110	1475	1230	1020	750	6⅞	8

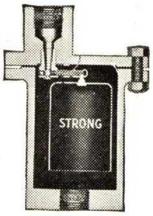
*Specify which size. State pressure rating required.

†Use safety factor in sizing.

‡Plus starting capacity thermal air valve.

No. 1701 Strong Steam Traps

Fabricated Steel Construction



A welded steel trap, built by modern fabrication methods. Designed to meet the increasing requirements for a small steel trap suitable for superheated pressures to 400 pounds (750°F.).

Welding process and operators are qualified in accordance with A.S.T.M. Welding Code U-69. Exhaustive service tests have proved the sound design and careful fabrication methods of this welded construction.

Body is electric welded from seamless boiler tube. Steel cover is bolted with special heat treated studs. The Anum-Metl valve and seat and stainless steel internal working parts insure trouble-free service.

No.	**1701**
Each	**$24.00**
*Pipe Size ... inches	½–¾
†Continuous Flow Capacity:	
At **75** Lb. Pressure ... pounds per hour	1915
At **125** Lb. Pressure ... pounds per hour	1475
At **200** Lb. Pressure ... pounds per hour	1010
At **400** Lb. Pressure ... pounds per hour	535
Height ... inches	6¾
Weight ... pounds	8

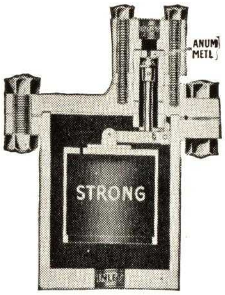
*Specify which size. State pressure rating required.

†Use safety factor in sizing.

Series 800 Strong Steam Traps

Steel Construction

***Regular—800 PSI., 750°F.**



Sound engineering design, highest grade materials, careful manufacturing and testing methods are required for drainage in high pressure, high temperature service.

The external design enables operator to detect leaks and tighten stud bolts before cutting occurs.

No.	Regular Each	†Pipe Size In.	‡Continuous Flow Capacity Pounds Water per Hour — Pressure Pounds 200	300	600	Ht. In.	Wt. Lb.
800	**$51.00**	½	850	680	....	10¾	34
801	**64.00**	¾	1900	1335	860	11⅞	57
802	**86.00**	1	4600	3400	1730	13⅜	93
803	**121.00**	1¼	6700	5700	2820	15	150
804	**146.00**	1½	10600	7800	4200	16⅝	215

*For high pressure traps, over 800 psi., prices and specifications on request.

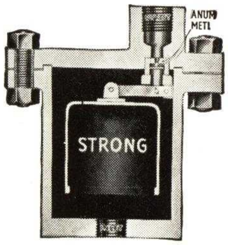
†May be tapped next size larger on order. State pressure rating required.

‡Use safety factor in sizing.

Write for information on flanging. Socket weld available at no extra charge.

Series 90 Strong Steam Traps

Fabricated Steel Construction



A welded steel trap, built by modern fabrication methods. Welding process and operators are qualified in accordance with A.S.T.M. Welding Code U-69. Exhaustive service tests have proved the sound design and careful fabrication methods of this welded construction. Suitable for temperatures to 750°F.

Has bolted-in seat, and Anum-Metl valve and seat. Internal parts are stainless steel.

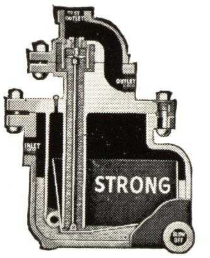
No.	Each	*Pipe Size In.	†Continuous Flow Capacity Pounds Water per Hour — Pressure, Pounds 125	250	400	600	Ht. In.	Wt. Lb.
90	**$36.00**	½	1230	625	485	...	8⅝	21
91	**56.00**	¾	2750	1620	1080	860	10 7/16	40
92	**75.00**	1	5500	3700	2460	1730	12 1/16	66
93	**90.00**	1¼	9500	6000	4200	2820	13 7/16	92
94	**125.00**	1½	14000	9600	6000	4200	15 1/16	128
95	**200.00**	2	27300	20000	13300	8900	17⅛	195

*May be tapped next size larger or for socket weld.

†Use a safety factor in sizing.

Write for price of Series 60 flanging. State pressure rating required.

Series 30 Strong Open Bucket Steam Traps



A reliable semi-steel trap for economical removal of condensation from steam, air or gas systems. Also used for water, oil or grease removal from separators.

Operation. The discharge valve closes and opens with each rise and fall of the hinged bucket. When bucket is empty and buoyant, discharge valve is closed. Condensate draining into trap raises the water level and overflows into the bucket, increasing its weight—causing bucket to sink—and opening discharge valve. Steam pressure forces water out until bucket empties, becomes buoyant and floats—thus closing the discharge valve instantly. This means discharge valve is either wide open or closed tight.

Removal of cap exposes the valve and seat for inspection or replacement without removing trap from line or breaking pipe connections.

Trap is guaranteed leakproof for one year.

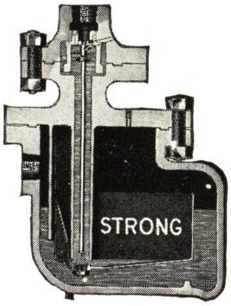
No.	Each	Pipe Size In.	*Continuous Flow Capacity Pounds Water per Hour — Pressure, Pounds 10	30	125	250	Ht. In.	Width In.	Wt. Lb.
30	**$22.50**	½	3000	2600	1230	625	11	9¼	42
31	**28.00**	¾	4200	4300	1560	900	12	9¾	48
32	**34.00**	1	10500	6900	2750	1250	14½	11¾	75
33	**47.00**	1¼	20400	14500	6100	3700	18⅛	13⅜	115
34	**60.00**	1½	27000	18000	8700	5000	19¾	15	150
35	**85.00**	2	52000	27500	11500	7350	21⅝	16⅛	210
36	**120.00**	2½	58000	54200	27300	14500	25¾	19¾	330

*Use safety factor in sizing.

State pressure rating required.

Series 30S Strong Steam Traps

Cast Steel Construction



For all types of general drainage work where pressure or temperature exceeds the limits of semi-steel construction. Suitable for temperatures to 600°F.

Body, cover and cap are cast steel. All internal working parts are interchangeable with semi-steel parts.

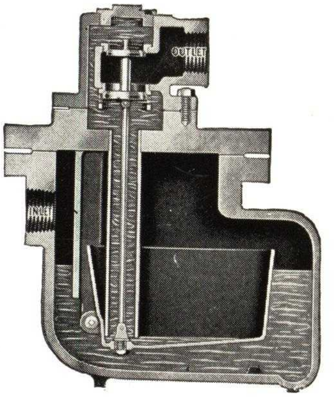
Frequently used for service on cold pressures to 1200 psi.

No.	Each	Pipe Size In.	*Continuous Flow Capacity Pounds Water per Hour — Pressure, Pounds 125	200	300	400	Ht. In.	Width In.	Wt. Lb.
31S	**$68.00**	¾	1560	1135	680	485	11½	9½	50
32S	**90.00**	1	2750	1900	1335	1080	14½	11¾	81
33S	**125.00**	1¼	6100	4600	3400	2460	17¼	13	121
34S	**150.00**	1½	8700	5900	3900	3150	18½	15¼	160
35S	**190.00**	2	11500	9700	6900	5100	20¾	17¼	220
36S	**260.00**	2½	27300	20000	14600	11500	25¾	19¾	360

*Use safety factor in sizing.

State pressure rating required. Flanging prices on application.

No. 50 Strong Large Capacity Steam Traps



This trap is equipped with a special valve arrangement for handling large quantities of liquid. Extra heavy construction.

Water capacity per hour: 40,000 pounds at 10 pounds pressure; 60,000 pounds at 30 pounds pressure; and 80,000 pounds at 50 pounds pressure.

As soon as sufficient water enters the trap, the bucket, being buoyant, floats and closes the valve and the trap is in operation.

As liquids increase, the body of the trap fills and the water enters the bucket, causing it to sink. The bucket being attached to the discharge valve, opens it and the trap begins to discharge, continuing to do so until the liquid is blown out of the body to the lowest edge of the bucket. As soon as this is done the bucket become buoyant, rises, and closes the valve.

Direct acting balanced valve insures positive action. Large valve areas allow full capacities at all pressures within the operating range.

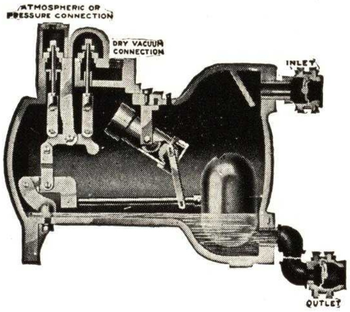
Discs and seats made of Anum-Metl.

Size pipe connection, 2½ or 3 inches.

Weight, 374 pounds.

No. **50**.................................each **$290.00**

Type A Strong Vacuum Traps



For automatically removing condensation from vacuum lines of condensing engines, vacuum oil separators, etc. Designed for atmospheric-gravity discharge and requires no steam or other agent for operation.

The sectional view shows the position of the parts with the trap filling. With the vacuum valve open, the same vacuum carried in the system drained has been established through the equalizing line. With the two pressures equalized, water flows to trap by gravity. The float becomes buoyant but cannot rise till buoyancy overcomes the weight of the ball tube. When the float rises, it tilts the ball tube, throwing the weights to the opposite end of tube. This closes the vacuum valve and opens the atmospheric valve, allowing atmospheric pressure to replace the vacuum while water flows from the trap by gravity. For the discharge the mechanism is reversed.

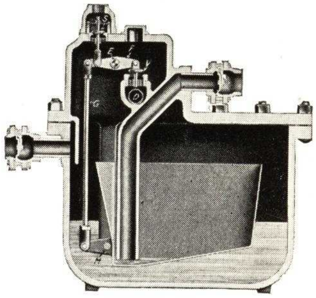
Price includes check valves, strainer and filter.

No.	Each	Pipe Size In.	Total Ht. In.	Total Lgth. In.	Width In.	Cap. GPH.	Wt. Lb.
8A	**$190.00**	1½	23	25	12½	400	235
9A	**302.00**	2	29	28½	19	800	410
10A	**330.00**	3	29	28½	19	1600	430

When ordering, include layout of installation.

Type M Strong Vacuum and Lifting Traps

For automatically removing condensation from vacuum systems. Also used as a pumping trap on low pressure, gravity systems or sump. Will discharge liquids to a point higher than the trap or against back pressure.



Requires steam, air or gas for operation only in volume equal to the quantity of liquid to be removed. Operation depends on the rise and fall of an open bucket. Water enters through inlet check valve and rises till the bucket is filled and loses buoyancy. As the bucket falls it opens the pressure valve, and closes vacuum valve. A pressure build-up quickly closes the inlet check and forces the water through outlet check valve. As water is removed the process is reversed and water flows to the trap by gravity.

When ordering, include information on pressure or vacuum of the line, pressure or head of discharge, pressure and temperature of agent used for discharging trap.

Price includes check valves and strainers.

No.	Each	Pipe Size In.	Ht. In.	Lgth. In.	Width In.	Cap. GPH.	Wt. Lb.
7M	**$150.00**	1	16	16½	14½	100	188
8M	**216.00**	1½	26½	20	16½	200	387
9M	**350.00**	2	29½	25	17	300	542
10M	**375.00**	3	29½	25	17	375	542

When steam over 80 pounds or 320°F. is used to discharge trap under a high vacuum, cold water spray should be used, at $10. each.

No. 530 Strong Thermal Traps

STRONG
OUTLET

Used either for condensate removal or as a thermal air valve in connection with additional drainage facilities. Recommended only for trap service not requiring the efficiency of Strong bucket traps. Also used under conditions where freezing may occur.

Has an integral strainer that saves the cost and installation of an additional strainer.

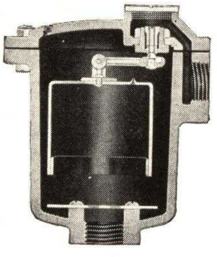
Available in two pressure ranges; 0 to 30 pounds and 30 to 125 pounds.

½-Inch Size....................................each **$5.00**

No. 500 Marsh Medium Pressure Steam Traps

Inverted Bucket Type

For installation on any service where considerable volume of condensate is to be handled.



This trap is self venting and has a large water capacity which permits high efficiency of the apparatus upon which it is installed. It is simple in construction and operation.

It discharges intermittently. Between cycles of operation the float is in raised position being filled with steam and air and the valve pin is closed against the seat. As condensate rises in trap body, the weight of the water forces steam and air out through the vent opening in the top of the float, filling float with water which causes it to drop. When condensate has drained from the trap, it fills with steam causing the float to rise once more and the valve pin to close against the seat.

It is substantially built to operate satisfactorily under the most exacting conditions. Body and cover are of cast iron. Bucket is of seamless copper and levers and clevises of cast bronze. Pins, valve and seat of stainless steel.

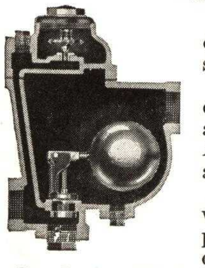
Standard finish is gloss black; ½ and ¾-inch traps can be furnished in satin finish or polished finish, nickel or chrome plate on special orders.

Size Inlet and Outlet Inches	Each	Capacities in Pounds per Hour at Various Pressure Differentials						
		5	**10**	**25**	**50**	**75**	**100**	**125**
½	**$12.00**	800	1125	1600	1850	1800	1700	1600
¾	**17.00**	2800	4200	4000	3000	2500	2200	2000
1	**28.80**	6000	11000	8700	6200	5700	4000	3800

To convert above capacities to square feet of equivalent direct radiation each trap will handle per hour multiply capacities given in table by 3. To convert these capacities to lineal feet of 1-inch pipe multiply by 9.

No. 508 Marsh Steam Traps

Medium Pressures—From 15 to 125 Pounds
1¼-Inch Inlet and Outlet



To remove condensation and air from drip points on steam mains, risers, steam coils, and blast heaters.

Permits a deep water seal on discharge valve. Valve is float controlled and located at a point low in the trap. Air is removed through thermostatically controlled by-pass in cap.

The trap may be suspended in piping without other support. All interior parts steam bronze and monel metal except seamless copper float.

Can be furnished with gage glass when so specified.

When ordering specify highest working pressure.

Operating Pressure....pounds	40	60	80	100
Each..........................	**$38.40**	**38.40**	**38.40**	**38.40**
Capacity, per Hour...pounds	860	980	1050	820

Penberthy Automatic Injectors

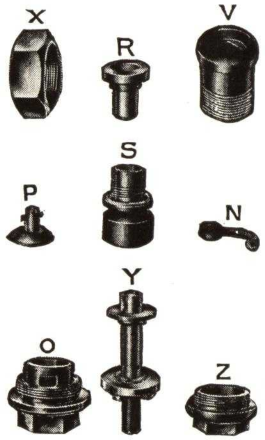
A high grade automatic machine. If the current of water is broken by any cause, the injector will pick up the water and re-establish the current to the boiler without the least attention.

Every machine is carefully tested, and will work on the following points: start low, 20 to 22 pounds steam on 3-foot lift. Work high, 165 to 170 pounds steam on 3-foot lift. Lift water, 20 to 24 feet on 60 to 80 pounds steam. Will deliver water to boiler at 160° to 212°, according to temperature of feed water and steam pressure. Water 200° to 212° can nearly always be delivered at nearly all pressures over 50 pounds by throttling suction valve and delivering minimum capacity.

It is advisable in many cases to install an injector large enough so that the supply can be cut down and attain this result, thereby saving fuel. By placing a short piece of pipe having a stopcock, in the overflow, and closing after the injector has started, water 8° to 10° hotter can be handled, but the injector is rendered non-automatic while the stopcock is closed.

Size	Each	Hp. Based on Ordinary Tubular Boiler	Hp. Based on 30 Lb. Water per Hp. per Hour	Pipe Connections Inches	GPH., 1 to 3-Ft. Lift, 60 to 110-Lb. Steam Pressure	
					Max.	Min.
OO	**$16.00**	4 to 8	6 to 12	⅜	80	45
AA	**20.00**	12 to 22	15 to 30	½	180	100
BB	**30.00**	20 to 45	25 to 60	¾	360	180
CC	**45.00**	45 to 80	50 to 100	1	600	325
DD	**60.00**	75 to 135	85 to 165	1¼	1000	525
EE	**90.00**	115 to 255	150 to 320	1½	1900	850
FF	**125.00**	200 to 400	250 to 500	2	3000	1600
GG	**200.00**	375 to 600	400 to 750	2½	4200	2150

Parts



In ordering parts give serial letter and number, which will be found on top of overflow. In referring to or ordering parts, designate them by letter or name.

Size of Injector......	OO	AA	BB
R—Steam Jet.....ea.	**$.25**	**$.35**	**$.45**
S—Suction Jet....ea.	.25	.35	.45
Y—Delivery Jet...ea.	1.25	1.50	2.00
X—Coupling Nut.ea.	.25	.30	.40
V—Tail Pipe.....ea.	.25	.30	.40
Z—Overflow Cap..ea.	.30	.40	.50
P-Overflow Valve.ea.	.40	.50	.60
N-Overflow Hinge.ea.	.10	.10	.15
O—Plug..........ea.	.60	.80	1.00
Strainer..........ea.	.40	.45	.50

Size of Injector............	CC	DD	EE	FF	GG
R—Steam Jet.........each	**$.55**	**$.65**	**$.75**	**$1.00**	**$2.00**
S—Suction Jet........each	.55	.65	.75	1.00	3.00
Y—Delivery Jet.......each	2.50	3.00	4.50	6.50	9.00
X—Coupling Nut......each	.50	.60	1.25	1.50	2.00
V—Tail Pipe..........each	.50	.60	.80	1.00	1.25
Z—Overflow Cap......each	.60	.70	.80	.90	1.50
P—Overflow Valve....each	.75	.90	1.10	1.25	1.75
N—Overflow Hinge....each	.15	.15	.20	.20	.30
O—Plug...............each	1.25	1.50	1.75	2.00	4.00
Strainer...............each	.55	.60	.75	1.00	1.50

Penberthy XL-96 Improved Ejectors

Siphon or Steam Jet Pumps

Lifts 22 to 25 Feet
Elevates 25 to 100 Feet
Pressure 30 to 100 Pounds

PENBERTHY
XL-96

The lifting and elevating power is so combined in the XL-96 Ejector as to make it unsurpassed by any device of its kind. The principle and power contained in so small, handy and economical an instrument, continually suggests new uses, which often demand that the tubes of the ejector be proportioned particularly for the service. The manufacturer is prepared to furnish special ejectors singularly efficient in the work for which they are designed.

No.	**Brass** Each	**Iron Body Brass Jets** Each	Steam Connection In.	Suction and Discharge In.
1	$8.00	.....	3/8	1/2
2	10.00	.....	1/2	3/4
3	15.00	.....	3/4	1
4	20.00	.....	1	1 1/4
5	25.00	20.00	1	1 1/2
6	35.00	27.50	1 1/4	2
*7	50.00	40.00	1 1/2	2 1/2
*8	70.00	50.00	2	3
*9	105.00	70.00	2	3 1/2
*10	145.00	95.00	2 1/2	4

	Capacity, Gallons per Hour				Vertical Lift Feet	
No.	3-Ft. Lift 40-65 Lb. Steam Press.	3-Ft. Lift 20-40 or 65-100 Lb. Steam Press.	50-Ft. Eleva. 40-65 Lb. Steam Press.	25-Ft. Eleva. 40-65 Lb. Steam Press.	40-75 Lb. Steam Press.	25-40 or 75-100 Lb. Steam Press.
1	240	235	120	180	23	20
2	500	450	250	375	25	22
3	840	700	420	625	25	22
4	1350	1300	650	950	25	22
5	1950	1850	975	1450	25	22
6	3500	3000	1750	2600	25	22
*7	5700	4350	2500	3750	25	22
*8	9500	8160	4750	7200	25	22
*9	13600	12400	6800	10200	25	22
*10	18400	17100	9200	13800	25	22

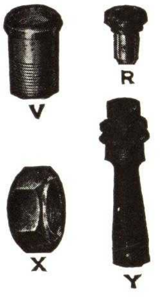
Sizes 5 and 6 will be sent in all brass, unless ordered with iron body and brass jets and steam connection.

*Unless ordered in brass, sizes 7 to 10 inclusive, will be shipped with iron body, brass jets and steam connection.

Table Showing Size of Boilers Required for Ejectors

No. of Ejector.........	**1, 2, 3**	**4, 5, 6**	**7, 8**	**9, 10**
Size of Boiler.......hp.	2 to 6	8 to 12	15 to 20	25 to 30

Parts

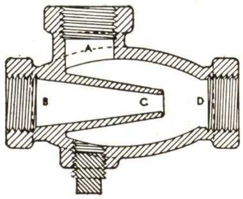


Size No.	**R-Steam Jet** Each	**Y-Del. Jet** Each	**V-Tail Pipe Brass** Each	**X-Coupling Nut Brass** Each	**Strainer** Each
1	$.25	$.80	$.25	$.25	$.45
2	.35	1.00	.30	.30	.50
3	.45	1.25	.40	.40	.55
4	.55	1.50	.50	.50	.60
5	.60	1.75	.50	.50	.75
6	.80	2.50	.60	.60	1.00
7	1.00	4.00	.80	1.25	1.50
8	1.25	6.00	1.00	1.50	....
9	1.50	8.00	1.00	1.50	....
10	2.00	10.00	1.25	2.00	....

Special Acid Resisting Ejectors

Furnished when specified at a slight additional cost.

McDaniel Cast Iron Suction Tees



A fitting for improving circulation in steam heating lines, acting as an injector to accelerate weak returns. Can be used for heating water noiselessly. Also used for sterilizer installations.

Cannot be used to lift liquids.
A and B = Inlets.
C = Jet orifice.
D = Outlet.

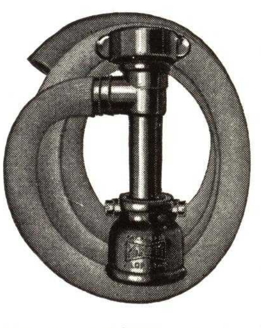
Standard Tees—100 Pounds Pressure

Size..........in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each...........	$1.50	1.50	2.00	2.25	2.75	3.50	5.50	8.00
Ship. Wt.....lb.	2	4	5	6	7	10	15	24

Extra Heavy Tees—250 Pounds Pressure

Size.in.	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
Each..	$3.50	4.50	5.50	7.50	11.00	16.00	27.00	43.00	60.00
Ship. Wt.lb.	10	12	14	20	26	38	70	100	160

Penberthy Filordrains

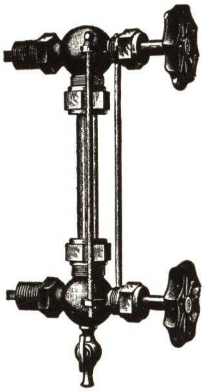


Fills or drains washing machines or other receptacles; widely used by photographers, etc., also where water is to be lifted from a low to a higher level. Equipped with shut-off bulb which automatically primes the Filordrain.

Operates by screwing on to faucet, placing end of hose in receptacle to be drained or filled, and turning on the water. Can be connected to fill with a mixture of hot and cold water. Furnished with 5 feet of hose and adapter. Equipped with hot water hose connection, if specified, at no extra charge.

Complete as Described..........................each **$3.00**

Rough Body Self-Cleaning Water Gauges



For 125 Pounds Working Pressure

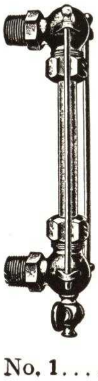
Water gauge of substantial construction and high quality material and finish.

Made of special bronze, tested to stand steam pressures 100 per cent in excess of those for which they are intended.

Self-cleaning.

No................	**401**	**402**	**403**
Each..............	**$2.75**	**3.00**	**4.50**
Connection Pipe Size.....inches	3/8	1/2	3/4
Diam. Glass.inches	5/8	5/8	3/4
Lgth. Glass..inches	8 or 10	12	16

No. 1 Expansion Tank Water Gauges



Tested for Pressure to 150 Pounds

Used in connection with hot water systems.

Standard finish is rough brass body with finished trimmings.

Threaded for 1/2-inch iron pipe.

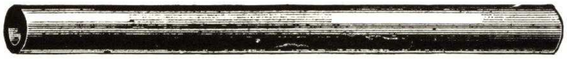
Gauge glass is 5/8x12 inches, protected by two guards.

Has T handle drip cock.

American thread.

No. 1..each **$2.60**

Standard Gauge Glasses

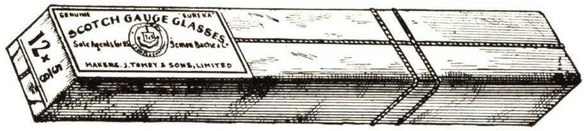


Lgth. In.	Per Dozen External Diam., In. ½	⅝	¾	Lgth. In.	Per Dozen External Diam., In. ½	⅝	¾	Lgth. In.	Per Dozen External Diam., In. ½	⅝	¾
8	$1.92	$2.52	$3.00	17	$3.96	$5.04	$6.24	36	$8.28	$10.80	$13.44
9	2.04	2.76	3.36	18	4.20	5.40	6.60	42	9.72	12.60	15.72
10	2.28	3.00	3.60	19	4.44	5.64	7.08	48	11.04	14.52	18.00
11	2.64	3.24	3.96	20	4.68	6.00	7.44	54	12.48	16.32	20.28
12	2.76	3.60	4.32	21	4.80	6.36	7.80	60	13.80	18.12	22.56
13	3.00	3.84	4.80	22	5.04	6.60	8.16	66	15.24	20.04	24.84
14	3.24	4.20	5.16	23	5.28	6.96	8.52	72	16.56	21.84	27.12
15	3.48	4.44	5.52	24	5.52	7.20	8.88	..	....	....	....
16	3.72	4.80	5.88	30	6.96	9.00	11.16	..	....	....	....

Recommended working pressures per square inch: up to 30 inches, 200 pounds; 31–40 inches, 180 pounds; 41–50 inches 160 pounds; 51–60 inches, 130 pounds; 61–70 inches, 100 lbs.

Intermediate lengths and longer lengths are also available. Prices upon application.

Eureka Genuine Scotch Gauge Glasses

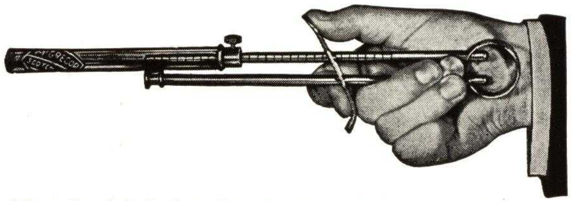

GENUINE SCOTCH GAUGE GLASSES
Sole Agents
MAKERS. J. TOMEY & SONS, LIMITED
12×

Lgth. In.	Price, per Dozen — Outside Diameter, Inches ½	⅝	¾	⅞	1	1¼	1½
8	$1.92	$2.52	$3.00	$4.08	$4.92	$8.16	$14.64
9	2.04	2.76	3.36	4.68	5.52	9.24	16.44
10	2.28	3.00	3.60	5.04	6.12	10.20	18.36
11	2.64	3.24	3.96	5.64	6.72	11.16	20.16
12	2.76	3.60	4.32	6.12	7.32	12.24	21.96
13	3.00	3.84	4.80	6.60	7.92	13.20	23.76
14	3.24	4.20	5.16	7.08	8.52	14.28	25.56
15	3.48	4.44	5.52	7.56	9.12	15.24	27.48
16	3.72	4.80	5.88	8.16	9.72	16.32	29.28
17	3.96	5.04	6.24	8.64	10.32	17.28	31.08
18	4.20	5.40	6.60	9.12	10.92	18.36	32.88
19	4.44	5.64	7.08	9.60	11.52	19.32	34.68
20	4.68	6.00	7.44	10.20	12.12	20.28	36.60
21	4.80	6.36	7.80	10.68	12.84	21.36	38.40
22	5.04	6.60	8.16	11.16	13.44	22.44	40.20
23	5.28	6.96	8.52	11.64	14.04	23.40	42.00
24	5.52	7.20	8.88	12.12	14.64	24.36	43.80
30	6.96	9.00	11.16	15.24	18.24	30.60	54.96
36	8.28	10.80	13.44	18.24	21.96	36.72	65.88
42	9.72	12.60	15.72	21.36	25.68	42.84	76.92
48	11.04	14.52	18.00	24.36	29.16	48.96	87.84
54	12.48	16.32	20.28	27.48	33.00	55.08	98.88
60	13.80	18.12	22.56	30.48	36.48	61.20	109.80
66	15.24	20.04	24.84	33.48	40.32	67.32	120.84
72	16.56	21.84	27.12	36.48	43.80	73.44	131.76

Lengths not regular are charged at price of next larger glasses of same diameter.

Chesterton Gauge Glass Cutters

Capacity, 6 Inches



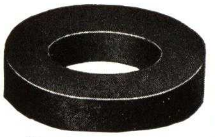
A handy nickel-plated tool with a sliding lever that can be placed close to the work to obtain more power. Steel cutting wheel.

Individually boxed and packed in cartons containing ½ dozen or dozen boxes.

Shipping weight per dozen, 4⅞ pounds.

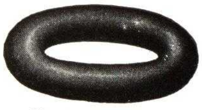
Each	$2.00
Extra Cutter Wheels and Pins per dozen	2.60

Rubber Gauge Glass Washers



No. 2011, Square

Size In.	No. 2011 Square per Doz.	No. 689 Round per Doz.
½	....	....
⅝	....	....
¾	....	....



No. 689, Round

Sherman Fusible Plugs

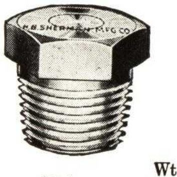
Made from high grade brass and filled with pure tin.

The tube plugs and long pattern plugs, ½ inch and larger, comply with the Massachusetts Steam Boiler Rules when marked "MASS. STD." and will be so marked when specified.

In ordering always give number and size.

Short Pattern

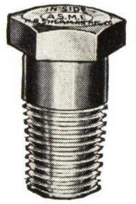
No. 99 Fireside (Outside)
No. 99A Waterside (Inside)
For Low Pressures Only



Size In.	Each	Wt., Lb. per Doz.
⅜	$.50	1¼
½	.60	2
¾	.75	3¼
1	1.00	5¾
1¼	1.50	10¾
1½	2.00	16½

No. 99F Tube Plugs

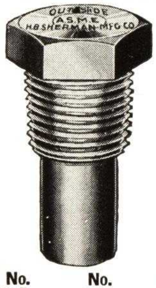
For Working Pressures
Not Exceeding 225 Pounds



Size In.	Each	Wt., Lb. per Doz.
⅜	$.90	2
½	1.20	3

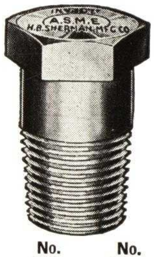
Long Pattern

Fireside (Outside)
No. 99B—For Working Pressures Not Exceeding 175 Pounds
No. 99D—For Working Pressures Over 175 Pounds and Not Exceeding 225 Pounds



Size In.	No. 99B Each	No. 99D Each	Wt., Lb. per Doz.
⅜	$1.10	....	2
½	1.20	$1.20	3½
¾	1.50	1.50	5½
1	2.00	2.00	9
1¼	3.00	....	18
1½	4.00	....	25½

Waterside (Inside)
No. 99C—For Working Pressures Not Exceeding 175 Pounds
No. 99E—For Working Pressures Over 175 Pounds and Not Exceeding 225 Pounds

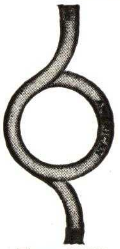


Size In.	No. 99C Each	No. 99E Each	Wt., Lb. per Doz.
⅜	$1.10	....	2
½	1.20	$1.20	3½
¾	1.50	1.50	5½
1	2.00	2.00	9
1¼	3.00	....	18
1½	4.00	....	25½

Ashcroft Steam Gauge Syphons

Brass: For 250 Lb. Pressure
Iron: For 500 Lb. Pressure

Connections are ¼ inch i.p.s.



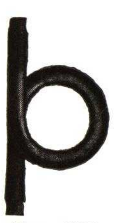
Type 1098 Coil Pipe

Coil Pipe Type

No. ¼–1098I, Iron	each	$.40
No. ¼–1098B, Brass	each	1.00

Pig Tail Type

No. ¼–1100I, Iron	each	$.30
No. ¼–1100B, Brass	each	.75



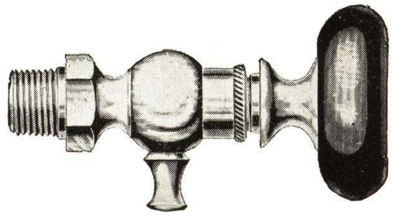
Type 1100 Pig Tail

Seamless Steel Syphons

Sizes ¼ or ½ Inch, Extra Heavy, 1000 Lb. and 850°F.	each	$1.50
½-Inch Size, Double Extra Heavy, 2000 Lb. and 850°F.	each	4.00

Compression Gauge Cocks

Without Stuffing Box



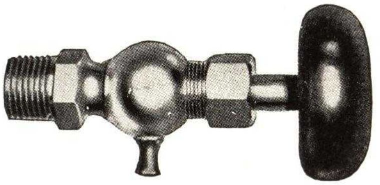
Threaded for iron pipe.
No. 2 packed 12 in a box, all others 6 in a box.

No.	2	3	4
Each	$.95	1.00	1.25
Threaded for Iron Pipe Size.....in.	⅜	½	¾
Weight.....ounces	5½	8¼	10

Compression Gauge Cocks

With Stuffing Box

For 150 Pounds Pressure



Threaded for iron pipe.

Packed 6 in a box.

No.	5	6	7
Each	$1.20	1.30	1.45
Threaded for Iron Pipe Size.....in.	⅜	½	¾
Weight.....ounces	6¾	8¾	10¾

Boiler Repairs for Heating Boilers

We are in a position to furnish repairs for all sizes and types of American Radiator & Standard Sanitary Corporation steam and hot water heating boilers.

In ordering parts it will be desirable to give the name and catalog number of the part required, together with the name and number of the boiler with its serial or series number. It is particularly important that the serial number or series number be given owing to the changes in construction of the different types of boilers.

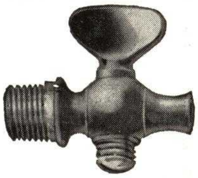
If the serial or series number of the boiler is missing, either the casting number can be given, or if necessary, a paper template sketch of the required part will be of great assistance in insuring prompt and correct shipment of the part required.

Air Cocks

Tee Handle

Straight Nose—Male End

With Round Shoulder



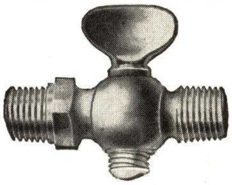
No.	6	7
Each	$.40	.45
Size.....inches	⅛	¼

With Hexagon Shoulder

No.	8	9	10	63	64
Each	$.50	.60	.90	.45	.50
Size.in.	⅜	½	¾	⅛	¼

Male Both Ends

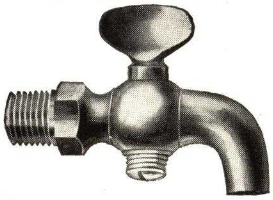
With Hexagon Shoulder



No.	18	19	20	21
Each	$.55	.65	.75	.90
Size.....in.	⅛	¼	⅜	½

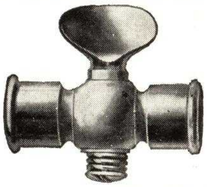
Bibb Nose—Male End

With Hexagon Shoulder



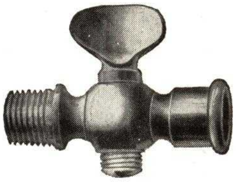
No.	26	27	28	33
Each	$.70	.80	.90	1.00
Size....in.	⅛	¼	⅜	½

Female Both Ends



No.	37	38	39	39A
Each	$.65	.70	.85	1.10
Size....in.	⅛	¼	⅜	½

Male and Female Ends

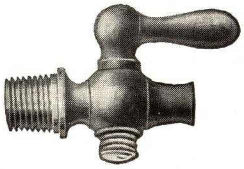


No.	40	41	42	42A
Each	$.75	.80	.90	1.15
Size....in.	⅛	¼	⅜	½

Lever Handle

Straight Nose—Male End

With Round Shoulder



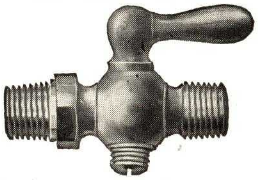
No.	12	13
Each	$.55	.60
Size.....inches	⅛	¼

With Hexagon Shoulder

No.	14	15	16	65	66
Each	$.65	.75	1.15	.60	.65
Size.in.	⅜	½	¾	⅛	¼

Male Both Ends

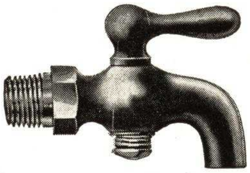
With Hexagon Shoulder



No.	22	23	24	25
Each	$.70	.80	.90	1.05
Size....in.	⅛	¼	⅜	½

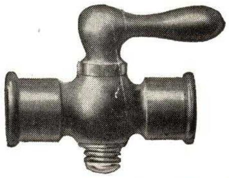
Bibb Nose Male End

With Hexagon Shoulder



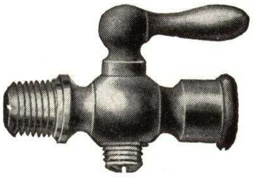
No.	29	30	31	32
Each	$.85	.95	1.05	1.15
Size...in.	⅛	¼	⅜	½

Female Both Ends



No.	43	44	45	45A
Each	$.80	.85	1.00	1.25
Size...in.	⅛	¼	⅜	½

Male and Female Ends



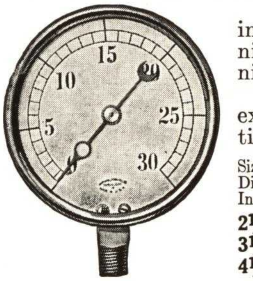
No.	46	47	48	48A
Each	$.90	.95	1.05	1.30
Size...in.	⅛	¼	⅜	½

No. 21 Marshalltown Steel Case Low Pressure Gauges

Single Spring

Sensitive and accurate and especially designed for the indication of low pressures and for steam, air or water.

Movement mounted on bottom piece independent of case.



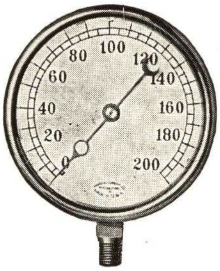
Made in 2½ to 4½-inch sizes only in steel case. Larger sizes are furnished in flanged iron case. Furnished without cock.

Gauge cock available at 60 cents extra; supplied with back connection at 30 cents extra.

Size Dial Inches	Brass Ring Each	N.P. Ring Each	Chrome Ring Each	Wt. Lb.
2½	$1.95	$2.10	$2.25	7/16
3½	2.55	2.70	2.85	1
4½	3.15	3.30	3.45	1½

No. 23 Marshalltown High Pressure Gauges

Steel Case—Single Spring



For installation on air compressors, pumps, engines, steam boilers, etc. For steam, oil, gas or water pressures. Syphon should be employed when used on steam.

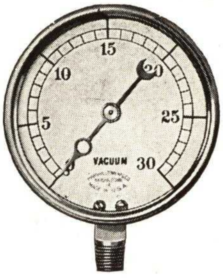
Flangeless drawn steel case, black enamel finish. Brass bourdon tube, independent non-corrosive movement, white enamel dial. Furnished with ¼-inch I.P.T. bottom male connection; ¼-inch back or ⅛-inch back or bottom connection also available.

For back connection add 30 cents to price; gauge cock available at 60 cents extra. For pressures 600 to 1000 pounds add 75 cents to price. For pressures below 15 pounds add 75 cents to price.

Size Dial..........inches	2	2½	3½	4½
Black or Brass Ring...ea.	$1.65	$1.95	$2.55	$3.15
Nickel-Plated Ring....ea.	1.80	2.10	2.70	3.30
Chrome Ring........each	1.95	2.25	2.85	3.45
Weight...........pounds	3/8	7/16	1	1½

No. 22 Marshalltown Vacuum Gauges

Steel Case—Single Spring



Indicates pressures below atmosphere. Standard dial graduation, 0 to 30 inches of mercury, with 5-inch figure intervals, 1-inch intermediate graduations.

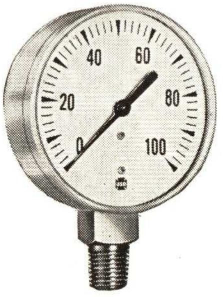
Mounted in flangeless drawn steel case, black enamel finish. Brass bourdon tube, independent movement, white enamel dial.

Furnished with ¼-inch I.P.T. bottom male connection; ¼-inch back or ⅛-inch back or bottom connection also available.

Size Dial.............inches	2	2½	3½	4½
Black or Bronze Ring.....ea.	$1.65	$1.95	$2.55	$3.15
Nickel-Plated Ring........ea.	1.80	2.10	2.70	3.30
Chrome Ring............each	1.95	2.25	2.85	3.45
Weight...............pounds	3/8	7/16	1	1½

For back connection add 30 cents to price; gauge cock available at 60 cents extra.

No. 500S U.S. General Pressure Gauges



For installation on house heating boilers, pumps, air pressure systems, water supply systems, refrigeration, air conditioning systems, etc. For use with steam, air, gas, water, oil or any fluid that will not attack brass or bronze. Single bronze bourdon tube. Corrosion resistant movement, mounted on sturdy brass socket with square shank for applying wrench.

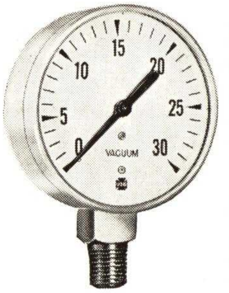
Available with drawn steel case, grey finish or drawn brass case with satin, nickel or chromium finish. Grey, satin, nickel or chromium finished ring. Light cream background with black lines and figures. Lower or back connections with ¼-inch standard male pipe thread. Grey finished steel case and ring regularly furnished.

Standard Dial Graduations

Maximum Indication Lb. per Sq. In.	Figure Intervals Lb. per Sq. In.	Intermediate Intervals Lb. per Sq. In.	Maximum Indication Lb. per Sq. In.	Figure Intervals Lb. per Sq. In.	Intermediate Intervals Lb. per Sq. In.
15	3	½	300	30	5
30	5	1	400	50	10
60	5	1	600	100	20
100	10	2	800	100	20
160	20	5	1000	100	20
200	20	5	....	...	..

Dial sizes: 2, 2½, 3½ and 4½ inches.

No. 501S U.S. Vacuum Pressure Gauges



For general use where it is desired to indicate the vacuum in any system. Single bronze bourdon tube. Corrosion resistant movement, mounted on sturdy brass socket with square shank for applying wrench. Available with drawn steel case, grey finish or drawn brass case with satin, nickel or chromium finish. Grey, satin, nickel or chromium finished ring. Dial has light cream background with black lines and figures. Lower or back connections with ¼-inch standard male pipe thread. Grey finished steel case and ring, graduated in inches of mercury is regularly furnished.

Standard Dial Graduations

Maximum Indication...............	inches of mercury	30
Figure Intervals.....................	inches of mercury	5
Intermediate Intervals.............	inches of mercury	1

Can be graduated in equivalent pounds per square inch or feet of water, as desired.

Dial sizes: 2, 2½, 3½ and 4½ inches.

No. 45A Marshalltown Steam-Vapor Compound Gauges

Steel Case—Single Spring

Designed for vapor and vacuum steam heating systems.

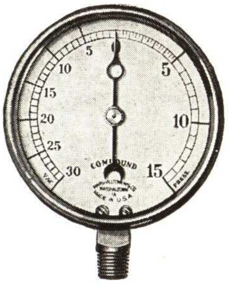
Graduations: from 0 to 30 pounds pressure, and from 0 to 20 inches mercury vacuum. On the pressure side there are ¼-pound graduating marks from 0 to 5 pounds.

Operating pressure is at the top center of the dial.

Furnished with ¼-inch male bottom unless otherwise specified.

Size Dial.........................inches	3½	4½
Black or Brass Ring...............each	$3.00	$3.60
Nickel Plated Ring.................each	3.15	3.75
Chrome Ring.........................each	3.30	3.90

When cock is desired, add 60 cents.
For back connection, add 30 cents.



No. 45 Marshalltown Steel Case Compound Gauges

Single Brass Spring

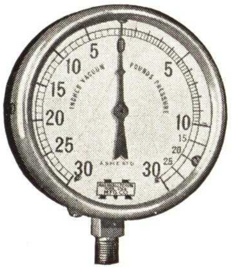
For indication of both pressure and vacuum.

Standard graduations: 15 lb. and 30 in.; 30 lb. and 30 in., 60 lb. and 30 in.; 160 lb. and 30 in.

If cock is required add 60 cents. For back connection, add 30 cents.

	Black or Brass Ring	N.P. Ring	Chrome Ring
2 -Inch Dial without Cock..each	$2.10	$2.25	$2.40
2½-Inch Dial without Cock..each	2.40	2.55	2.70
3½-Inch Dial without Cock..each	3.00	3.15	3.30
4½-Inch Dial without Cock..each	3.60	3.75	3.90

No. 45 A.C. Marshalltown Retard Compound Gauges



An accurate and sensitive gauge especially adaptable for installation on vapor and vacuum heating systems.

The dial is graduated from zero to 30 pounds pressure and from zero to 30 inches vacuum. On the pressure side there are quarter pound graduating marks from zero to 10 pounds; every 5 pounds thereafter.

Furnished with ¼-inch male bottom connection unless otherwise specified.

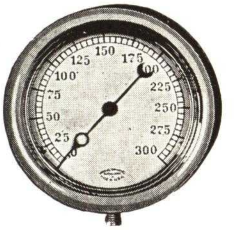
Size..................in.	3½	4½	6	8½	12
With Steel Case, Less Cock.............each	$3.60	4.20	.....	.....	.....
With Iron Case, Less Cock.............each	....	....	$15.44	23.94	54.16

Gauge cocks not furnished unless specified. Add 60 cents for 3½ and 4½-inch sizes; $1.80 for larger sizes.

Add 30 cents for back connection on 3½ and 4½-inch sizes.

No. 24 Marshalltown High Pressure Gauges

Flanged Case—Single Spring



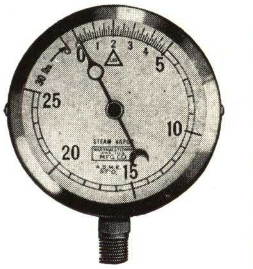
For steam, water, oil, gas or air pressures. Has seamless brass bourdon tube. Furnished with ¼-inch I.P.T. male connection. Back connection supplied if specified.

Gauge cocks will be supplied with sizes 3½ to 6 inches inclusive at 60 cents extra and with sizes 8½ to 12 inches at an addition of $1.80 extra. For iron case with higher or lower pressures or brass case with higher pressures an extra charge is made.

	Iron Case			Brass Case		
Size Dial In.	Brass Ring Each	N. P. Ring Each	Chrome Ring Each	Pol. Each	N. P. Each	Chrome Plated Each
3½	$5.40	$5.55	$5.70	$11.28	$12.26	$13.16
4½	6.45	6.60	6.75	12.25	13.60	14.60
6	13.44	13.96	15.16	20.50	21.82	23.02
8½	21.94	22.76	24.54	37.76	40.74	42.54
12	52.16	53.78	57.32	93.20	98.40	101.90

No. 21A Marshalltown Steam-Vapor Gauges

Steel Case—Single Spring



Designed for low pressure steam heating systems. Conforms to the A.S.M.E. standards.

Graduations: 2-ounce marks from 0 to 5 pounds; 1-pound marks from 5 to 25 pounds.

Operating pressure is at the top center of the dial.

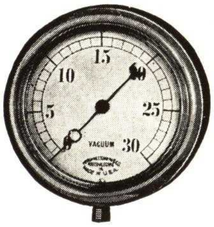
Furnished with ¼-inch male bottom unless otherwise specified.

For back connection add 30 cents to price; gauge cock available at 60 cents extra.

Size Dial.........................inches	3½	4½
No. 21A, with Black or Brass Ring..each	$2.55	$3.15
No. 21A, with Nickel Plated Ring...each	2.70	3.30
No. 21A, with Chrome Ring.........each	2.85	3.45

No. 25 Marshalltown Flanged Case Vacuum Gauges

Single Spring



For board or wall mounting. Graduations from 0 to 30 inches of mercury.

Made in cast iron or polished cast brass.

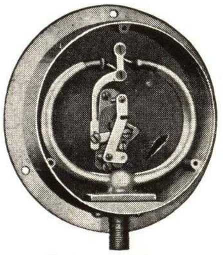
Size Dial Inches	Iron Case Brass Ring Each	Iron Case Nickel-Plated Ring Each	Iron Case Chrome Ring Each	Polished Brass Case Each	Nickel-Plated Brass Case Each	Chrome Plated Brass Case Each
3½	*$5.40	*$5.55	*$5.70	†$11.28	†$12.26	†$13.16
4½	* 6.45	* 6.60	* 6.75	† 12.25	† 13.60	† 14.60
6	†13.44	†13.96	†15.16	† 20.50	† 21.82	† 23.02
8½	†21.94	†22.76	†24.54	† 37.76	† 40.74	† 42.54
12	†52.16	†53.78	†57.32	† 93.20	† 98.40	†101.90

Gauge cocks will be supplied with sizes 3½ to 6 inches inclusive at 60 cents extra and with sizes 8½ and 12 inches at an addition of $1.80.

*For back connection, add 30 cents. For pressures 600 to 1,000 pounds add 75 cents; for pressures below 15 pounds add 75 cents.

†For pressures above 600 pounds but not over 1,000 pounds add 20 per cent to the price. No extra charge for back connection or for service marking or name on dial.

No. 31 Marshalltown Double Spring Gauges



Internal View

Designed for use in service where vibration and pressure pulsations are severe. Pressure range up to 750 pounds.

Bourdon tubes are made from seamless brass tubing, cut rolled and shaped to minimize vibration and make them self-draining and non-freezing. Movements have cast segment with hard phosphor bronze rebushed frame.

Furnished with ¼-inch male bottom connection unless otherwise specified.

Size Dial Inches	Iron Case Brass Ring Each	Iron Case Nickel-Plated Ring Each	Iron Case Chrome Ring Each	Polished Brass Case Each	Nickel-Plated Brass Case Each	Chrome Plated Brass Case Each
4½	$12.14	$12.40	$13.40	$16.50	$18.28	$20.48
6	17.56	19.14	20.34	25.02	27.90	31.90
8½	30.38	31.32	33.12	48.02	50.90	56.50
12	69.60	71.00	74.50	112.08	120.70	127.40

For compound double spring gauges, add $1.00.

No extra charge for back connection.

Gauge cock not supplied unless specified. When requested a tee handle cock will be supplied with sizes 4½ to 6 inches inclusive at an addition of 60 cents and a lever handle cock with sizes 8½ and 12 inches at an addition of $1.80. These gauges not furnished with dial reading below 60 pounds or over 750 pounds.

No. 41 Marshalltown Flanged Case Combination Gauges

100
75
125
50
150
25
175
200
COMBINATION

For the indication of water pressure in both pounds per square inch (inner circle) and equivalent feet of water (outer circle).

Standard graduations: 100 pounds and 230 feet; 200 pounds and 460 feet; and 300 pounds and 690 feet.

Male bottom connection, ¼ inch, furnished unless otherwise specified.

Size Dial Inches	Iron Case Brass Ring Each	Iron Case Nickel Plated Ring Each	Iron Case Chrome Ring Each	Polished Brass Case Each	Nickel-Plated Brass Case Each	Chrome Plated Brass Case Each
3½	*$5.85	*$6.00	*$6.15	†$15.24	†$16.84	†$18.64
4½	* 6.90	* 7.05	* 7.20	† 17.90	† 19.80	† 22.00
6	†16.68	†17.20	†18.40	† 25.78	† 28.36	† 32.36
8½	†30.58	†31.36	†33.16	† 50.96	† 54.06	† 59.62
12	†62.94	†64.56	†68.06	†103.70	†106.76	†113.42

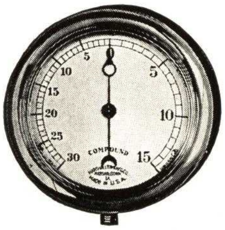
Gauge cocks will be supplied with sizes 3½ to 6 inches inclusive at 60 cents extra and with sizes 8½ and 12 inches at an addition of $1.80.

*For back connection, add 30 cents. For pressures 600 to 1,000 pounds add 75 cents; for pressures below 15 pounds add 75 cents.

†For pressures above 600 pounds but not over 1,000 pounds add 20 per cent to the price. No extra charge for back connection.

No. 42 Marshalltown Flanged Case Compound Gauges

Single Spring



For pressure and vacuum indication.

Standard graduations: 15 lb. and 30 in.; 30 lb. and 30 in.; 60 lb. and 30 in.; 120 lb. and 30 in.

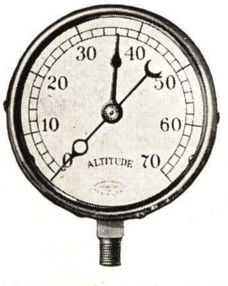
Size Dial Inches	Iron Case Brass Ring Each	Iron Case Nickel-Plated Ring Each	Iron Case Chrome Ring Each	Polished Brass Case Each	Nickel-Plated Brass Case Each	Chrome Plated Brass Case Each
3½	*$5.85	*$6.00	*$6.15	†$15.24	†$16.84	†$18.64
4½	* 6.90	* 7.05	* 7.20	† 17.90	† 19.80	† 22.00
6	†16.68	†17.20	†18.40	† 25.78	† 28.36	† 32.36
8½	†30.58	†31.36	†33.16	† 50.96	† 54.06	† 59.62
12	†62.94	†64.56	†68.06	†103.70	†106.76	†113.42

Gauge cocks will be supplied with sizes 3½ to 6 inches inclusive at 60 cents extra and with sizes 8½ and 12 inches at an addition of $1.80.

*For back connection, add 30 cents. For pressures 600 to 1,000 pounds add 75 cents; for pressures below 15 pounds add 75 cents.

†For pressures above 600 pounds but not over 1,000 pounds add 20 per cent to the price. No extra charge for back connection or for service marking or name on dial.

No. 43 Marshalltown Steel Case Altitude Gauges



Brass Ring

For gravity hot water systems and for indicating height of water in tanks, stand pipes, etc.

Standard graduation 0 to 70 feet. Can be supplied, however, for other altitude readings.

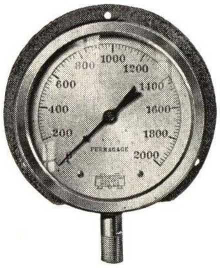
Furnished in steel case 3½ or 4½-inch dial.

No. 43, 3½-Inch Dial less Cock. .... each	**$3.00**
No. 43, 4½-Inch Dial less Cock. .... each	**3.60**

For back connection add 30 cents. Gauge cock available at 60 cents extra.

Marshalltown Permagages

Cast Iron Case



For high pressures and temperatures; will stand up under pulsation, vibration and corrosion.

For pressures under 100 pounds a drawn alloy steel tube is used, with welded connection. For pressures exceeding 100 pounds, a special alloy, bored steel tube is used, with threaded connection.

High ratio monel metal movement. One-piece stainless steel socket.

Hand engraved dial with numerals and graduating marks cut in heavy brass, filled with black enamel and the background given a silvered finish. Standard dials are: 0-30, 60, 100, 160, 200, 300, 400, 600, 800, 1000, 1500, 2000, 3000, 5000, 8,000, and 10,000 pounds per square inch.

Compound gauges can be supplied with any of the above pressure readings to 600 pounds and 30 inches vacuum.

Standard male bottom connection up to 1000 pounds pressure, ¼ inch; 1000 pounds pressure and above, ½ inch.

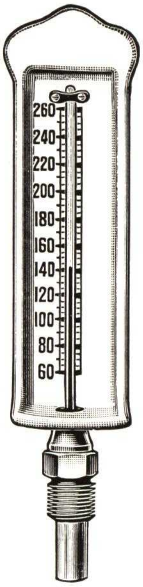
Dial Size In.	Drawn Alloy Steel Tubes Black Ring Each	 Nickel Ring Each	 Chrome Ring Each	Bored Alloy Steel Tubes Black Ring Each	 Nickel Ring Each	 Chrome Ring Each	Approx. Ship. Wt. Lb.
6	$33.10	$33.50	$34.70	$34.10	$34.50	$35.70	6
8½	55.80	56.40	58.20	61.20	61.80	63.60	13
12	75.00	76.00	79.50	82.90	83.90	87.40	18

Gauge having ¼-inch connection, furnished with brass lever handle cocks. No cocks furnished with ½-inch connection gauge.

American Improved Enameled Thermometers

For Hot Water

Range, 60–260°F.



No. 7501, Straight Stem

Frame is made of enameling iron, finished in white, mounted on stud with set-screw that permits rotating instrument.

Made with graphite bath.

Graduations, figures, and letters are fused into the finish.

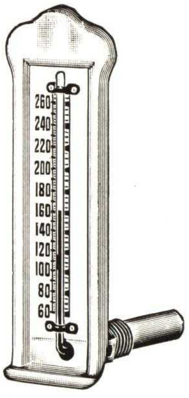
Provided with non-fading red spirit magnifying lens tube.

Steel stud has ½-inch pipe thread.

Standard length of extension under thread is 1 inch.

Can be furnished with steel stud with ¾-inch pipe thread with extension 1 inch below thread.

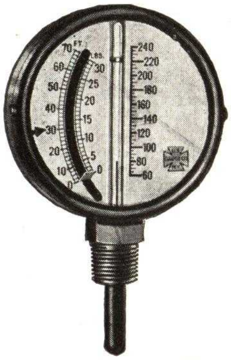
Size frame, 7½x2¼ inches.



No. 7503, Angle Stem

	Straight Stem	Angle Stem
No.	**7501**	**7503**
Each	**$1.15**	**1.40**
Shipping Weight .... ounces	9	13

No. 589 U.S. Combination Glass Tube Thermometers and Altitude Gauges



A combination instrument used on hot water heating systems to indicate the water temperature, head of water above gauge, and pressure in system on one dial.

Pressure element—single bronze bourdon tube, non-corrosive movement mounted on cast brass socket.

Glass tube thermometer filled with red liquid and recessed in dial. Bulb end protected by mounting in brass graphite filled bulb.

Lower or back connection with ½-inch male pipe thread.

Gauge standard with black finished steel case and ring, white dial with black lines and figures.

Standard Dial Graduations

	Maximum Indication	Figure Intervals	Intermediate Intervals
Lb. per Sq. In.	30	5	1
Ft. of Water.	70	10	1
Temp. Deg. F.	60°—240°	20°	5°

Size Dial.	inches	**3½**	**4½**
No. **589**	each	. . . . .	. . . .

Add 20 cents for back connection.

Also available with drawn steel case with black finish and polished brass, nickel or chromium finished ring; drawn brass case with polished brass, nickel or chromium finish.

Taylor Floating Glass Dairy Thermometers

For food supply dairies, etc. Accurate to within 1°.

Floats upright in the milk, making it easy to take temperature readings.

Legible scales are inside a transparent glass cylinder. Easy-reading yellow-back mercury-filled tubes.

Length, 10 inches.

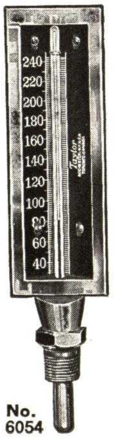
The words Cheese, Churning and Freezing, and lines are in red on the scale.

No. 5704 has a shatterproof covering, which strengthens the thermometer and in event of breakage prevents particles of glass from getting in material being tested. This covering will not warp or cloud at any temperature within range of thermometer.

Temperature Range

Minimum.	0 to 10°F	10 to 30°F	10 to 30°F
Maximum.	110 to 120°F	220 to 230°F	220 to 230°F
Scale Divisions	1°	2°	2°
No.	**5702**	**5703**	**5704**
Per Dozen.	**$8.03**	**8.03**	**12.75**

Taylor General Purpose Thermometers



No. 6054

For shower baths, small sterilizers, hot water and brine lines, etc.

Black, 5½-inch V-shaped case with satin chrome front. Black-oxidized scale with white figures and graduations, and magnifying tube; filled with non-fading easy reading red Permacolor.

Scale division is 2°. Pipe thread ⅜ inch. Stem length, including thread, 1½ inches.

Furnished, if ordered, with ½ inch thread, at 79 cents extra.

No.	**6054**	**6055**	**6056**	**6057**
Each.	**$4.95**	**5.45**	**4.95**	**5.45**
Approx. Temp. Range, F. deg.	40 to 240	40 to 240	—20to +120	—20to +120

No. 300 Arco-Detroit Multiport Air Valves

For All Automatically Fired 1-Pipe Steam Systems Operated at Pressures Not Over 3 Pounds

No. 300

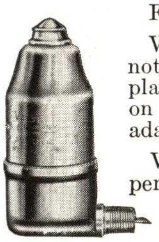
Adjusting knob turns through almost 360° providing an infinite number of settings from wide open to a controlled minimum. Slot for locking the knob can be turned with screwdriver or ten cent piece.

Employs the patented automatic modulator that reduces port area in the event of sudden pressures over a few ounces.

Has noise muffling passage so that vented air passes downward between inner and outer shells which provides a silencing action to muffle noise. Has ⅛-inch angle connection. Black finish. Siphon tongue replaces old style siphon tube, simplifies installation on thin radiation, permits use with Detroit adapters for all straight shank applications.

No. **300**. . . . . .each **$1.95**

No. 500 Ideal Airid Syphon Air Valves



For venting low pressure steam radiators.

Vents rapidly and is quiet in operation. Does not hiss, sputter or leak. Syphon tongue replaces old syphon tube, simplifies installation on thin radiation, permits use with Detroit adapters for all straight shank applications.

Valve is non-adjustable and cannot be tampered with.

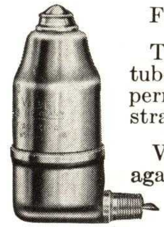
Float contains volatile liquid sealed under vacuum. Steam temperature causes internal gas pressure, expanding diaphragm at bottom of float, closing valve.

Angle connection, ⅛-inch i.p.t.

Brass finish.

No. **500**. . . . . .each **$1.30**

No. 510 Ideal Vac-Airid Vacuum Valves



For one pipe vacuum jobs.

The siphon tongue replaces old style siphon tube, simplifies installation on thin radiation, permits use with Detroit adapters for all straight shank applications.

Valve is non-adjustable and self sealing against return of air.

Float contains volatile liquid sealed under vacuum. Steam temperature causes internal gas pressure, expanding diaphragm at bottom of float, closing valve.

Angle connection, ⅛ inch I.P.T.

Chromium-plated finish.

No. **510**. . . . . .each **$1.75**

Arco Favorite Air Valves

For Venting Low Pressure Steam Radiators

All metal non-adjustable; thermostatic float and syphon.

No. **525**, Single Pattern ⅛-In Male Thread. . . . . . .each **$.70**
No. **527**, Straight Shank ¼-Inch Male Thread. . . .each **.95**
No. **528**, Straight Shank ½-Inch Female and ¾-Inch Male Thread. . . . . .each **1.05**

No. 5000 Ideal Variport Air Valves

For Steam Pressures Up to Ten Pounds

Adjustable vent port permits an accurate setting of orifice to provide exact venting rate required for any radiator regardless of location. Complete venting of all radiators can be secured almost simultaneously, and with intermittent automatic firing, assures a more balanced job in which each radiator will have a chance to get its proper share of heat, every time pressure is generated.

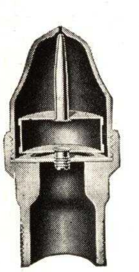
Operation is positive, quiet, automatic and does not expel steam or water. Siphon tongue replaces old style siphon tube, simplifies installation on thin radiation, permits use with Detroit adapters for all straight shank applications.

Angle connection, ⅛-inch I.P.T.

Chromium-plated finish.

No. **5000**..each **$1.65**

No. 815 Ideal Quick Vents



For venting mains, long runs of pipe, indirect stacks, drop risers, etc., where air must be quickly expelled, but where valve need not close against water. On low pressure steam jobs radiators will heat quicker, under less pressure, by venting piping system with Ideal Quick Vents. Operates by volatile liquid contained within expansible member which has diaphragm at top and bottom, giving ample movement of stem. No adjustment. All metal. Nickeled finish. Will last indefinitely.

Packed 6 in a box.

No. **815**, ¾-Inch..................................each **$2.45**

No. 841 Ideal Quick Vents

For one-pipe steam mains.

With full ¼-inch port for faster venting.

Has ¾-inch male and ½-inch female i.p.t.

Location of power element above seat protects it from damage from unusual pressures. Finished in dull silver with blue top.

No. **841**.............................each **$2.95**

No. 842 Ideal Vac Quick Vents

For one-pipe steam mains

With full ¼-inch port for faster venting. Vacuum feature prevents return of air to system when it cools.

Has ¾-inch male and ½-inch female i.p.t.

Location of power element above seat protects it from damage from unusual pressures.

Finished in dull silver with green top.

No. **842**.............................each **$3.90**

No. 861 Arco-Detroit Hurivents

Designed to vent the mains with utmost speed so that the steam can reach the radiators with a minimum of frictional loss.

To accomplish this, the hurivent has a full ½-inch venting port which, combined with an ingenious internal construction, enables almost instant venting without steam or water leakage.

Entirely automatic.

Has ½-inch female and ¾-inch male thread.

Red and black finish.

No. **861**.............................each **$5.40**

No. 862 Arco-Detroit Hurivents

Designed for operation on vacuum systems. Also provides speedy, complete and dry venting of all air, but prevents the return of the air into the mains when the system cools.

Has a full ½-inch venting port which, combined with an ingenious internal construction, enables almost instant venting without steam or water leakage.

Entirely automatic.

Has ½-inch female and ¾-inch male thread.

Green and black finish.

No. **862**..............................each **$8.80**

No. 3 Dole Radiator Air Valves

For venting radiators of hand fired gravity steam heating systems.

Vents 25 sections 2 column 38 inch cast iron steam type radiator with rated heating surface of 100 square feet under a constant steam pressure of 5 pounds per square inch in 15 minutes.

Has double shell construction providing separate passages for air and condensation. Extra large float stops spitting or water leakage. Complete venting is assured at any pressure up to 10 pounds.

Connecting steam is ⅛ inch pipe thread. Unique siphon drain tube construction permits easy installation on any type of free standing radiator.

Chromium plated.

Packed in individual cartons; 12 cartons to standard package. Shipping weight each, 5 ounces.

No. **3**..each **$1.30**

No. 1A Dole Vari-Vent Radiator Air Valves

Made of brass.

An adjustable vent valve which balances the flow of steam to radiators of oil, gas or stoker fired systems at the first breath of boiler pressure.

The vari-vent control provides any venting speed between wide open and virtually closed.

Tamper-proof construction, once set can be locked securely.

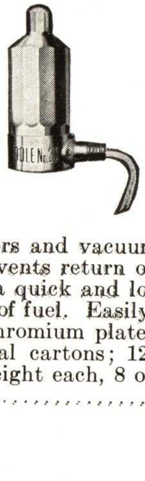
Chromium plated.

Packed in individual cartons, 12 cartons to standard package.

Shipping weight each, 4 ounces.

No. 1A..each **$1.75**

No. 2B Dole Radiator Vacuum Valves



For venting radiators and vacuumizing one-pipe steam heating systems. Prevents return of air after it has been once expelled. Gives a quick and long amount of heating from a small amount of fuel. Easily installed on any free standing radiator. Chromium plated, Dodecagon shell.

Packed in individual cartons; 12 cartons to standard package. Shipping weight each, 8 ounces.

No. 2-B..each **$2.70**

No. 2B Dole Vari-Vent Radiator Vacuum Valves

DOLE VARI VENT

An adjustable valve for vacuumizing and balancing gravity steam heating systems. Has a patented bronze bellows vacuum seal that locks out air after it has been once expelled from the system. The easily adjusted vari-vent feature assists in equalizing steam distribution to all radiators.

Has simple, clearly indexed dial. Specially designed cam on collar assures straight line venting control. Nickel silver pin defeats corrosion and wear.

Tamper-proof. Can be locked in place —no special tools required.

Chromium plated, Dodecagon shell.

Packed in individual cartons, 12 cartons to standard package. Shipping weight each, 8 ounces.

No. **2B**.....................................each **$3.00**

Dole Straight Shank Air Valves

No. 3C

Designed particularly for venting unit heaters, ceiling radiators, pipe coils and convectors on hand-fired systems. Will not stick or spit water.

No. 3C is specially designed for unit heaters, on either hand or automatically fired systems. Construction prevents water leakage.

Individually packed in cartons; 12 cartons to a standard package.

No..................................	3A	3B	3C
Each................................	**$1.80**	**1.80**	**2.00**
I.P.T.........................inches	⅛	¼	*
Weight.......................ounces	6½	6½	6¼

*¾-inch male, ½-inch female.

No. 4 Dole Quick Vent Straight Shank Valves

Size Iron Pipe Thread: ¾-Inch Male—½-Inch Female

For quick venting steam mains carrying any pressure up to 25 pounds. Does not provide a seal against water. Recommended only for mains that end 18 inches or more above the boiler water line. Chromium plated.

Packed 6 valves to standard package.

Shipping weight each, 5¾ ounces.

No. **4**...each **$2.50**

No. 5 Dole Quick Vent Straight Shank Float Valves

Size Iron Pipe Thread: ¾-Inch Male; ½-Inch Female

For quick venting steam mains carrying any pressure up to 15 pounds. Has double shell construction (providing separate passages for air and condensation) to give a positive seal against water. Chromium plated. Individually packed.

No. **5**, Shipping Weight, Each 14 Ounces........each **$4.90**

No. 6B Dole Straight Shank Radiator Vacuum Valves

For venting the mains of vacuumized one-pipe steam systems. Prevents the return of air after it has been once expelled. Keeps mains hot long after steam pressure is reduced. Closes against water. Chromium plated.

No. **6B**...each **$7.45**

No. 103 Dole Straight Shank Radiator Vacuum Valves

Size Iron Pipe Thread: ¾-Inch Male—½-Inch Female

This straight shank valve is for venting the mains of vacuumized one-pipe steam systems. Prevents the return of air after it has been once expelled.

Has Dole bellows-operated vacuum seal. Closes against water.

Chromium plated.

Packed in individual cartons; 6 cartons to standard package.

Shipping weight each, 4½ ounces.

No. **103**......................................each **$3.00**

No. 1933 Dole Radiator Air Valves

Made of brass.

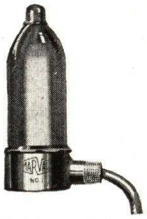
Straight Shank type recommended for venting pipe coils, ceiling radiators and convectors on gravity steam heating systems. Assures complete venting up to 10 pounds pressure.

Angle Type for venting radiators of gravity steam heating systems. Extra large float provides seal against condensation to prevent spitting or water leakage.

Bright nickel finish. Stem length, ¾ inch. Wrapped in tissue, 12 valves to a standard package.

	Straight Shank			**Angle Type**
Size, I.P.T...........inches	⅛	¼	¾ Male & ½ Female	⅛
No. **1933**..............each	**$.95**	**.95**	**1.05**	**.70**
Height...................inches	3⅜	3⅜	3½	3
Diameter................inches	1¼	1¼	1⅞	1¼
Weight, Each........ounces	3¾	4	4¼	2¾

No. 1 Marval Syphon Automatic Air Valves



All-metal construction; has rapid air eliminating capacity.

Thermostatic action is so sensitive as to distinguish between steam and heated air. The flotation action is positive and prevents any leakage or spitting of water.

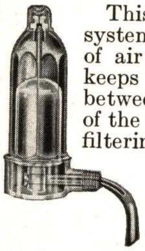
Combination of fluted syphon and ample filtering capacity of valve shell and base keep valve free of water. Will not water-log.

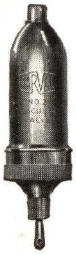
In ⅛-inch angle pattern for cast iron radiators; ⅛ or ¼-inch male straight pattern for convection radiators and for venting of piping; ¾-inch male straight pattern for venting of piping. This size also has the connection tapped ⅜-inch female I.P.S.

Chrome finish. One in box; 12 in carton.

No. **1**, ⅛-Inch Angle Pattern....................each	**$2.00**
No. **1**, ⅛ or ¼-Inch Male Straight Pattern......each	**2.60**
No. **1**, ¾-Inch Male Straight Pattern..............each	**3.00**

No. 2 Marval Syphon Air and Vacuum Valves


Angle


Straight

This valve rapidly vents air from the system and seals it against further intrusion of air after the steam pressure drops. It keeps the system under a variable vacuum between firing up periods. The combination of the patented fluted syphon and the ample filtering capacity of the valve shell and base keep the valve entirely free of water. Valve cannot waterlog under any operating condition.

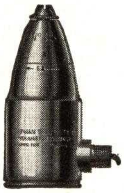
Packed individually.

⅛-In. Angle Pattern for Cast Iron Radiators....each	$2.80
⅛-In. or ¼-In. Male Straight Pattern for Convection Radiators and for Venting Piping..............each	3.40
*¾-In. Male Straight Pattern for Venting Piping.each	3.80

*Also has the connection tapped ⅜-inch I.P.S.

No. 1A Hoffman Adjustable Air Vent Valves

For venting radiators or heating units of 1 or 2-pipe gravity steam systems. Automatically fired.



Made in angle pattern only.

Maximum guaranteed operating pressure, 10 pounds.

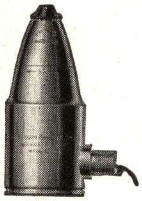
Connection, ⅛-inch I.P.S.

Has adjustable vent ports permitting instant adjustment and accurate balancing of steam circulation to radiators of 1-pipe heating systems. By varying the rate of venting, the flow of steam into a radiator can be controlled.

Chromium plated.

No. 1A..each **$1.76**

No. 2A Hoffman Adjustable Vacuum Vent Valves



Angle Pattern

Maximum Guaranteed Operating Pressure, 10 Pounds

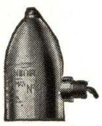
For radiators of 1-pipe gravity vacuum systems, hand or stoker fired. Connection, ⅛-inch I.P.S.

Has double air lock construction which prevents the return of air after the radiator has been completely vented. Adjustable vent port assures uniform distribution of steam. Leakproof construction plus sensitive thermostatic action insures complete venting. Chromium plated.

No. 2A..each **$3.02**

No. 40 Hoffman Ventor Non-Adjustable Venting Valves

For Venting Radiators or Heating Units of 1 or 2-Pipe Gravity Steam Systems



Built for strictly competitive conditions.

Embodies traditional Hoffman methods of quality manufacture.

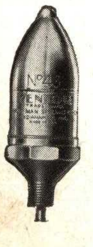
Angle pattern only. Connection, ⅛ inch I.P.S.

No. **40**, Nickel Plated................each **$.72**

No. 43 Hoffman Air Valves

For Automatically Fired Systems

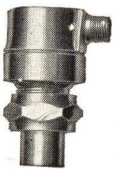
Maximum Operating Pressure, 10 Pounds



Recommended for use on convector radiators and unit heaters. Syphon tube automatically telescopes to avoid damage from shallow installation obstructions. Straight shank type, provided with a ¼-inch standard pipe thread connection nipple. Nickel plated.

No. **43**..............................each **$.95**

No. 3 Hoffman Air-Line Valves

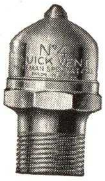


Used on air-line or Paul systems. The inlet end is equipped with a ⅛-inch standard pipe thread connection nipple for attaching to the radiator.

The outlet end consists of a union nut and nipple, the latter being tapped with a standard ¼-inch pipe thread.

No. 3..............................each **$3.47**

No. 4 Hoffman Quick Vent Air Valves


No. 4

For venting mains of 1 and 2-pipe gravity steam systems ending 18 inches or more above boiler water line. Will not close against water.

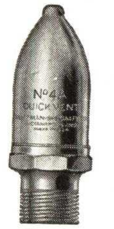
Non-adjustable port.

Maximum operating pressure, 25 pounds.

Size connection, ¾-inch male.

No. **4**..............................each **$2.45**

No. 4A Hoffman Quick Vent Float Air Valves


No. 4A

For venting mains of 1 and 2-pipe gravity steam systems, closes against water and steam.

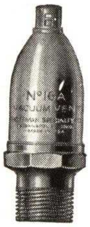
Non-adjustable port.

Maximum operating pressure, 10 pounds.

Size connection, ¾-inch male.

No. **4A**..........................each **$2.92**

No. 16A Hoffman Quick Vent Float Air and Vacuum Valves



For venting steam mains of 1-pipe vacuum systems, closes against water. Double air locks prevent return of air to system.

Non-adjustable vent port.

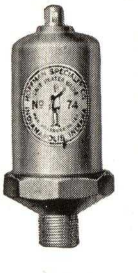
Maximum operating pressure, 10 pounds.

Size connections, ¾-inch male.

No. **16A**..............................each **$3.95**

No. 74 Hoffman Unit Heater Air Valves

Maximum Working Pressure, 35 Pounds



Vents air at any time, whether pressure is rising, dropping or holding steady.

Unit heater keeps hot, no cooling off needed to get rid of air. Internal float. Closes against water, prevents spitting.

Made with cast iron body finished in gray-green.

Capacity, 300 cubic inches per minute at 1-pound pressure, 800 cubic inches per minute at 10 pounds and over.

On usual installations, tee is put in outlet line and vent installed on short nipple 6 or 8 inches above line.

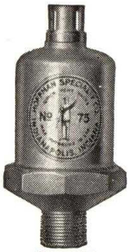
Length overall, 6 inches. Diameter, 2½ inches. Male thread ¾ inch.

No. **74**...each **$4.20**

No. 75 Hoffman Quick Vent Float Air Valves

For venting mains of 1 and 2-pipe large steam systems.

Large area float member positively closes port against water.


No. 75

Non-adjustable vent port. Maximum operating pressure, up to 10 pounds.

Size connection, ¾-inch male.

No. **75**..............................each **$4.90**

No. 75A Hoffman Quick Vent Float Air Valves

For venting mains of 1 and 2-pipe large steam systems operating at a low pressure.

Closes against water.

Non-adjustable vent port.

Maximum operating pressure, 3 pounds.

Size connection, ¾-inch male.

No. **75A**..each **$5.60**

Hoffman Quick Vent Float Air and Vacuum Valves

No. 76

For venting steam mains of 1-pipe vacuum systems.

HOFFMAN SPECIALTY
No 76
INDIANAPOLIS

No. 76

Double air locks. Non-adjustable vent port.

Maximum operating pressure, up to 10 pounds.

Size connection, ¾-inch male.

No. **76**............................each **$7.45**

No. 76A

For venting steam mains of 1-pipe vacuum systems. Ideal for venting large amounts of air at low pressure. Maximum pressure, 3 pounds.

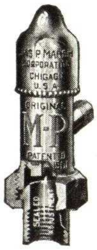
Double air locks.

Non-adjustable vent port.

Size connection, ¾-inch male.

No. **76A**..................................each **$8.80**

Original Paul Air Line Valves


JAS P MARSH CORPORATION CHICAGO U.S.A.
ORIGINAL
M-P
PATENTED
SEALED

The Original Paul Valve operates automatically either with or without mechanical suction on the return air line. Has sealed adjustment.

When used instead of the ordinary automatic air valve, foul air may be piped to basement or sewer.

The sealed adjustment valve with spring seat and adjusting screw concealed in the union assures a tight sealed system and has contributed to the success and popularity of air line systems.

Extra large air passage permits air to be expelled from radiator rapidly. No resistance of steam by cold air bound radiators.

Furnished with regular standard connections of ⅛-inch to radiator and ¼-inch union connection to return air line.

Post can be furnished for sealed or top adjustment.

Valve Complete..............................each **$2.20**
Extra Carbon Posts............................each **.90**

B & G Air Vents

The B & G Air Vent is for all hot water heating systems.

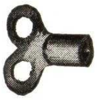
It offers positive assurance of eliminating air from piping of hot water heating systems.

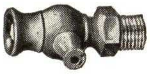
Made in ⅛-inch size only.

Each................................ **$7.00**

Compression Radiator Air Valves

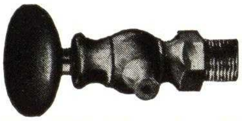
With Loose Key





⅛-Inch I.P.T., Nickel Plated..................each ....
Extra Keys....................................each ....

No. 2396 Wood Wheel Compression Air Valves

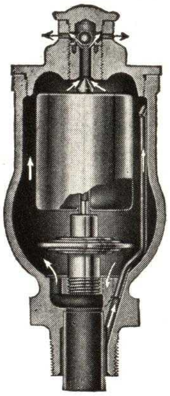


This valve is for hot water radiators. Threaded for ⅛-inch iron pipe.

Wrapped and packed 12 in a box.

No. **2396**, Chromium-Plated ....each ....
No. **2396**, Nickel-Plated ....each ....

No. 5 Marsh Float and Thermostatic Rapid Vent Valves



A heavy cast brass body, sensitive, rapid vent for any location where a large volume of air is to be rapidly vented and where steam, vapor, and water is to be kept in.

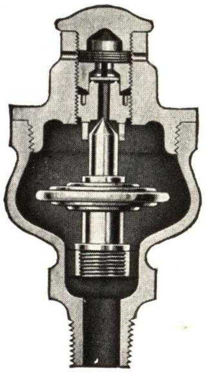
Works on any low pressure system of steam heating. Assures long life and satisfactory operation. Adjusted and tested at factory and shipped ready for installation, to work automatically from below atmosphere on up to 10 pounds steam pressure.

Noiseless and guaranteed against defect. With ⅜ or ¾-inch male bottom connection.

No. **5**.........................each **$7.00**

No. 6 Marsh Quick Vents

Thermostatic Construction



For installation at high points in the piping where there is not sufficient head room for the larger float and thermostatic vents and where float mechanism is not required to prevent the escape of water.

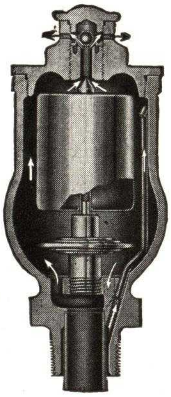
With large port for the quick venting of air. Constructed with vacuum check to prevent entry of air into the system through the vent when the steam pressure drops.

Suitable for working pressures up to 15 pounds per square inch.

Body is of cast brass and is nickel plated.

No. **6**, with ¼-In. Conn...each **$4.6**
No. **6**, with ⅜-In. Conn...each **4.6**

No. 55 Marsh Medium Pressure Air Vents



This vent is capable of expelling large volumes of air without passage of water or steam. By expelling air rapidly and automatically, quicker and more efficient heating up is achieved.

Body is of heavy cast brass with extra heavy brass float and diaphragm.

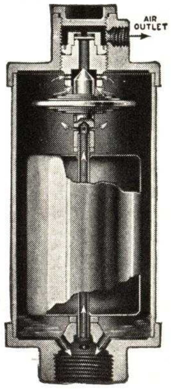
Equipped with vacuum top feature to prevent air from re-entering unit or steam line. Made in one body size having either ⅜ or ¾-inch male connection.

For pressures up to 125 pounds.

In the standard construction, air is expelled through 4 openings, in bonnet. Where it is desired to pipe off the vented air, a special cap is provided having a ¼-inch female connection.

No. **55**.....................each **$16.00**

No. 7 Marsh Air Eliminators



Free vent for air at all temperatures for the return main.

Combined float and thermostat. Vacuum top keeps out the air.

Free and unlimited vent of all air, hot or cold, cannot water-log, does not spit or leak water, and closes instantly for steam or vapor.

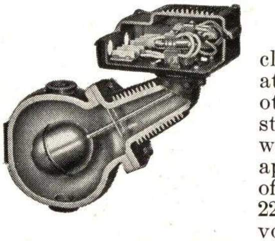
Adjusted and tested at factory and shipped ready for installation to work automatically from below atmosphere and up to 10 pounds pressure.

Made ¾ and 1 inch connections.

No. **7**.....................each **$20.00**

No. 150 McDonnell Pump Control Low Water Cutoffs and Alarm Switches

For 150 Pounds Maximum Steam Pressure

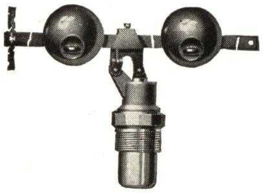


For boilers of any size.

Equipped with two switches, one closes on small float drop to operate electric boiler feed pump. The other operates on greater drop to stop burner and complete low water alarm circuit. Underwriters' approved. Electrical ratings: cutoff and pump control: 1 hp., 110–220 volts, a.c.; ¼ hp., 115–230 volts, d.c.; alarm: 1 ampere, 110 volts, a.c. or d.c. Body tappings, 1 inch top and bottom.

No. **150**, With Automatic Reset Low Water Cutoff Switch, Shipping Weight, 34 Pounds.........each	**$48.30**
No. **150**-M, With Manual Reset Low Water Cutoff Switch, Shipping Weight, 34 Pounds.........each	**48.30**

No. 800 Arco Water Damper Regulators



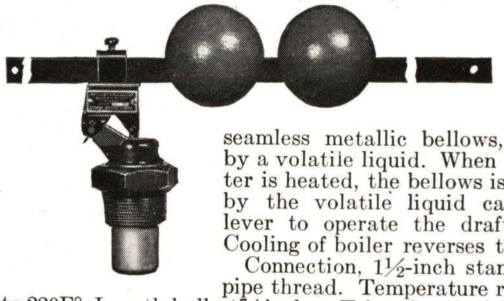
Immersion type; for house heating systems. Will control combustion to maintain steadily a boiler water temperature of any degree between 100 and 220°F.

Made entirely of metal and is durable, and accurate. Length of bulb, 2¾ inches. Standard pipe thread connection, 2 inches. Trimmings: one 37-inch lever, two 4-pound weights, 12 feet of chain, two ceiling pulleys, and four S hooks. Finish, black baked enamel.

No. **800**, Shipping Weight, 17 Pounds..........each	**$18.00**

No. 801-A Arco Water Damper Regulators

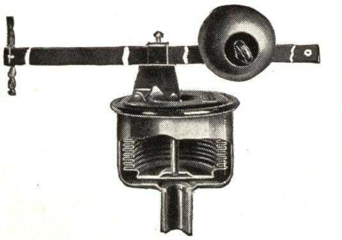
For hot water supply boilers. As the dampers are small and light, little power is required to operate them.



Regulator bulb is immersed in boiler. Bulb contains a seamless metallic bellows, actuated by a volatile liquid. When boiler water is heated, the bellows is expanded by the volatile liquid causing the lever to operate the draft control. Cooling of boiler reverses the action.

Connection, 1½-inch standard iron pipe thread. Temperature range, 100° to 220F°. Length bulb, 1⅞ inches. Trimmings include 30-inch lever, two 3-pound weights, 6-foot chain and two S-hooks. Shipping weight, 12 pounds.

No. 905 Arco Steam Damper Regulators



An all-metal pressure regulator for controlling dampers on steam-heating boilers. Sensitive and accurate. Diaphragm is a metallic bellows. The steam pressure is on the outside of the bellows, with the stem or thrust rod extending down within the bellows where it is attached to the head at the bottom.

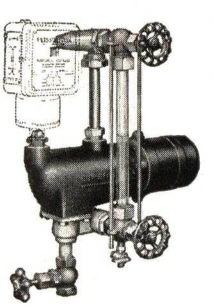
For pressures up to 15 pounds. Connection, 1-inch male thread.

Trimmings furnished are 37-inch lever, 4-pound weight, 12-foot chain, 2 ceiling pulleys and 4 S-hooks.

Shipping weight, 15 pounds.

Minneapolis-Honeywell Low Water Cutoffs

Gauge Glass Types



For domestic use. Easily installed. Supplied complete with quick hookup fittings and length of copper tubing which permits mounting in gauge glasses. An opening is provided to accommodate Pressuretrol, facilitating wiring. Blow-off cock is standard.

Rating in Amperes

	Running Current		Locked Rotor	
Volts	A.C.	D.C.	A.C.	D.C.
115	7.4	2.5	44.5	25
230	5.1	1.3	30.6	13

Tapping, ½ inch pipe threads. Height, 5 inches. Width, 3⅛ inches. Depth, 10½ inches.

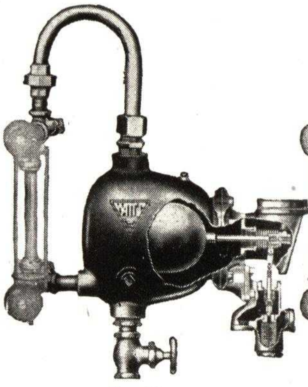
Prices do not include the Pressuretrol or Vaporstat.

In ordering specify type number, center to center gauge glass mounting holes if longer than 12 inches, and special features if required.

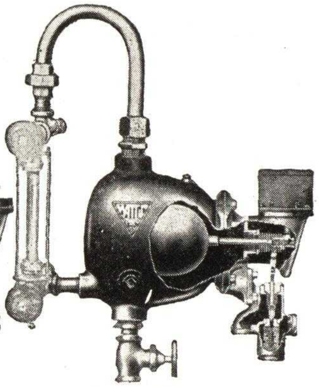
Type C**402**A, Series 40, Ship. Wt., 10 Lb.......each	**$20.50**
Type C**602**A, Series 60, Ship. Wt., 10 Lb.......each	**20.90**

Extra length tubing, add $1.90 if distance between centers of gauge glass mounting holes is longer than 12 inches. Order part No. 32239A separately.

Series 60 Watts Boiler Water Feeders



No. 60



No. 60LWD

For gauge glass installation. Automatically supplies water as needed. For boilers up to 5000 square feet. Maximum steam pressure, 35 pounds.

Iron body construction, brass trim.

No. 60 feeder equipped for gauge glass installation. Conforms with A.S.M.E. boiler code requirements.

LWD switch protects the boiler in case of accidental failure of the water supply, and also has extra contact for alarm.

Width, 5½ inches. Length, 12½ inches. Height, 14 inches.

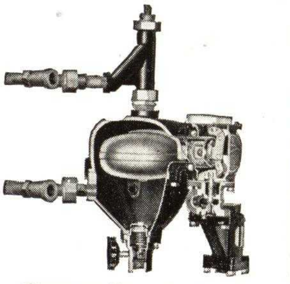
Weight, 30 pounds.

No. **60**, Boiler Water Feeder Only.............each	**$52.92**
No. **60** LWD, Boiler Water Feeder and Low Water Cutoff.................................each	**62.48**

Send Us Your Mail Orders
We Assure You Your Orders Will
Be Handled Promptly and Carefully

No. 47 McDonnell Quick-Hook-Up Safety Feeders

Maximum Steam Pressure, 25 Pounds



For hand fired boilers up to 5000 square feet capacity.

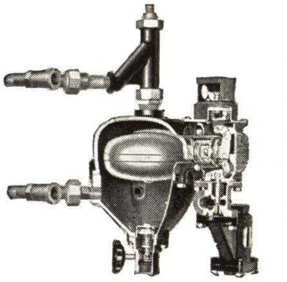
Has a patented isolated feed valve (cool feed valve). It also has the quick-hook-up feature which cuts installation time and accurately reproduces the true boiler water level in the float chamber. Other features are stainless steel valves, double syphon construction, straight thrust valve action, and large integral strainer.

Deep sediment chamber and special spring closing blow-off valve. Feed water piping ½-inch.

No. **47**, Shipping Weight, 30 Pounds...........each **$43.47**

No. 47-2 McDonnell Combined Safety Feeders and Cut-Offs

Maximum Steam Pressure, 25 Pounds



For boilers up to 5000 square feet capacity.

No. 47 safety feeder with No. 2 low water cut-off switch mounted in place.

For automatic jobs where completely automatic operation is desired.

Shipping weight, 31 pounds.

No. **47-2**.....................................each **$51.32**

No. 67 McDonnell Low Water Fuel Cutoffs

Maximum Steam Pressure, 25 Pounds
¾-Hp., 110-220 Volts, A.C.; ¼-Hp., 115 Volts, D.C.

For boilers of any size. Underwriters' approved. Will cut current to burner whenever water level in steam boiler drops to ¼ inch in gauge glass. Quick-Hook-Up permits quick installation in water glass tappings.

Large size sediment chamber and straight-through A.S.M.E. approved blow-off valves. Center pivoted bellows.

Two-switch construction. An extra switch, included at no extra cost, closes on a small drop without stopping burner to operate low water alarm or electric water feeder.

Shipping weight, 11 pounds.

No. **67**.....................................each **$22.34**

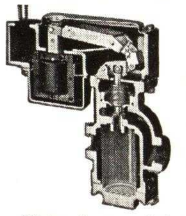
No. 101 McDonnell Electric Water Feeders

For Use with Low Water Cut-Offs

Maximum Steam Pressure 25 Pounds

115-Volts, 60 Cycles

Converts low water cut-offs into a feeder-cut-off combination giving complete automatic water level control. Solves the problem of applying a feeder to a modern jacketed boiler.



Positive opening coil; leverage mechanism assures closure against water pressures up to 150 pounds; stainless steel valve, with straight thrust, tight closure; built-in manual feeding button; packless sylphon bellows construction; large area built-in strainer.

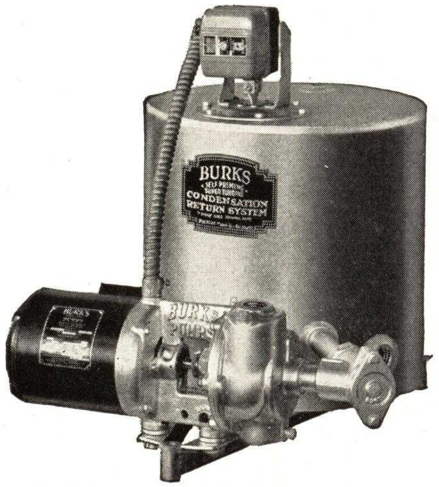
Has ½-inch water piping tappings.

Shipping weight, 7 pounds.

No. **101**.....................................each **$28.98**

Burks Condensation Return Units

For Maximum Water Temperature of 210°F.



Receiver tank is constructed of copper bearing steel and is supplied with one 1½-inch condensate return opening, ¾-inch vent opening, and one 1-inch drain opening. Pump discharge, 1 inch.

Tank and pump unit are securely mounted on structural steel base. Automatic two pole float switch governs operation of motor. Repulsion-induction motor with built-in overload protection. Float switch assembly completely eliminates stuffing boxes and separate attachments. Float movement is transmitted to the switch through a strong copper plated brass bellows soldered to the inside of mounting flange, forming a seal against escape of vapor.

The receiver tank is to be vented to atmosphere from opening in top of tank, and vent pipe should be the same size as the opening.

The strainer in the suction line is fitted with a monel metal screen, preventing scale and dirt entering pump. Large bolted cap can be quickly removed for screen inspection or cleaning.

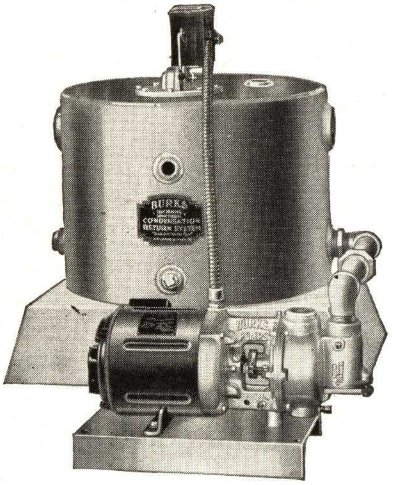
Has only one moving part. No metal to metal contact. Operating pressures to 80 pounds per square inch. Stainless steel non-corroding shaft with oversize ball bearings on shaft. Pumping efficiency saves fuel. Compact; requires small space. Impeller and raceway of cast bronze. Automatically self-priming; will not steambind. Pumps air alone to high pressure; pumps water alone to high pressure; pumps air and water mixed to high pressure. Balanced hydraulic load insures minimum torque.

Size Tank	gallons	14
Height Over All	inches	24
Length Over All	inches	24
Width	inches	28

No.	A-C., Sgl. Ph., 60-Cy., 110 or 220-V. Each	No.	A.C., 2 or 3-Ph., 60-Cy., 220-V. Each	Motor Hp.	Pump Cap. Gph.	Condensate Gph.	Press. at Pump (Saf. Pop. Setting)	Radiation in. Sq. Ft.	Approx. Ship. Wt. Lb.
4OC13	**$108.00**	4O**C313**	**$118.50**	1/6	270	90	10	3000	140
					250	83	20	2750	
					215	71	30	2350	
					180	60	40	2000	
4OC14	**119.00**	4O**C314**	**129.50**	1/4	175	58	50	1925	150
					155	51	60	1690	
4OC15	**139.00**	4O**C315**	**149.50**	1/3	135	45	70	1490	160
					125	41	80	1360	
4OC17	**126.00**	4O**C317**	**136.50**	1/4	350	116	20	3850	150
					330	110	30	3650	
					270	90	40	3000	
4OC18	**144.00**	4O**C318**	**154.50**	1/3	250	83	50	2750	160
					210	70	60	2350	
4OC21	**150.00**	4O**C321**	**160.50**	1/3	540	180	10	6000	160
					530	177	20	5870	
					470	157	30	5200	
					360	120	40	4000	

Burks Condensation Return Units

For Maximum Water Temperature of 210°F.



Receiver tank, of copper bearing steel, is supplied with two 3-inch condensate return openings, 1½-inch vent opening, two 2-inch pump suction openings, two 1-inch drain openings. Pump discharge opening, 1¼ inches.

Automatic two-pole float switch is securely bolted on top of receiver tank. Float movement is transmitted to the switch through a strong copper plated brass bellows soldered to the inside of mounting flange, forming a seal against escape of vapor. All pumps for single phase current are powered with repulsion-induction motors.

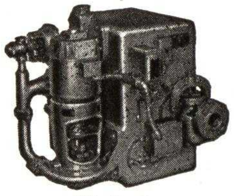
Pump is furnished with a built-in monel metal screen, which can be easily removed for cleaning or inspection.

Self priming, completely automatic. Has stainless steel shaft mounted in heavy duty ball bearing bronze impeller with monel metal blades and bronze raceways.

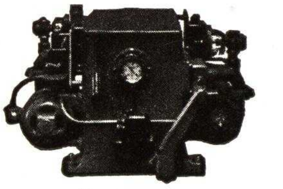
No.	A.C., Sgl. Ph., 60-Cy., 110 or 220-V. Each	A.C., 3-Ph., 60-Cy., 220/440-V. Each	D.C., 115-V: Each	Motor Hp.	Pump Cap. Gph.	Condensate Gph.	Discharge Press. at Pump	Radiation in Sq. Ft.	Approx. Ship. Wt. Lb.
4A3–2-Y	48C28 $196.00	48C328 $196.00	48C128 $212.00	½	285	95	50	3150	340
					250	83	60	2750	340
					230	77	70	2550	340
					220	73	80	2400	340
					210	70	90	2350	340
					200	66	100	2200	340
4A5–1-Y	48C31 196.00	48C331 196.00	48C131 212.00	½	560	187	10	6200	340
					530	177	20	5900	340
					490	163	30	5400	340
					450	150	40	5000	340
					420	140	50	4650	340
					400	133	60	4400	340
					370	123	70	4100	340
4A5–2-Y	48C32 216.00	48C332 216.00	48C132 234.00	¾	345	115	80	3800	350
					320	107	90	3550	350
					300	100	100	3300	350
4A7-Y	48C34 196.00	48C334 196.00	48C134 212.00	½	810	270	10	9000	340
					760	253	20	8400	340
					705	235	30	7800	340
					655	218	40	7200	340
					605	201	50	6700	340
4A7–1-Y	48C35 216.00	48C335 216.00	48C135 234.00	¾	575	191	60	6300	350
					530	177	70	5900	350
4A7–2-Y	48C36 249.00	48C336 249.00	48C136 289.00	1	500	166	80	5500	360
					460	153	90	5000	360
					430	143	100	4700	360
4A9-Y	48C38 216.00	48C338 216.00	48C138 234.00	¾	1030	343	10	11400	350
					970	323	20	10700	350
					900	300	30	10000	350
					820	273	40	9100	350
					750	250	50	8300	350
4A9–1-Y	48C39 249.00	48C339 249.00	48C139 289.00	1	640	213	60	7070	360
					600	200	70	6640	360
4A13-Y	48C42 249.00	48C342 249.00	48C142 289.00	1	1490	497	10	16500	360
					1360	453	20	15100	360
					1250	417	30	13900	360
					1150	383	40	12800	360
					1040	347	50	11600	360

Hoffman-Economy Vacuum Heating Pumps

Return Line



Vertical,
Single Unit



Horizontal,
Duplex Unit

A single unit provides all the pump equipment necessary for the operation of a vacuum heating system. A duplex pump provides a standby pump, motor and automatic control which insures against any shutdown for inspection or repairs.

Vacuum pumps should be installed so that the condensate will flow to pump by gravity wherever possible. Condensate can be lifted a considerable height, but lifts should be avoided if possible.

The regulators are set at the factory to cut in at 2 inches and out at 7 to 8 inches, unless otherwise specified. This adjustment may be readily changed after installation.

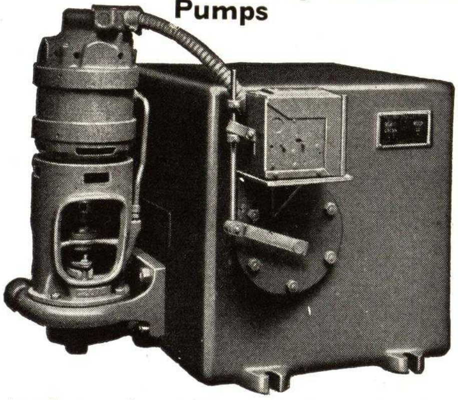
In ordering state: type of pump required; total square feet of direct cast iron radiation or equivalent; electric current available—a.c. or d.c.; exact voltage; if a.c. specify whether 1, 2, or 3-phase and also whether 25, 50, or 60-cycle; maximum pressure against which pump must discharge; approximate height between pump and boiler water line where pump is to be installed below boiler room floor level.

Vertical

Single Unit No.	Duplex Unit No.	Rated Cap. Sq. Ft. EDR	Dis. Press, Lb. Per Sq. In. at Pump Outlet	*Rating 5½″ Vacuum at 160°F. Water Only Cap. GPM	Simultaneous Water Cap. GPM	Simultaneous Air Cap. CFM	Ship. Wt., Lb. Single Unit	Ship. Wt., Lb. Duplex Unit
VV26	VVD26	2500	20	3¾	1¼	1.3	685	1039
VV27	VVD27	2500	30	3¾	1¼	1.3	750	1200
VV27S	VVD27S	2500	30	3¾	1¼	1.3	800	1300
VV28	VVD28	2500	40	3¾	1¼	1.3	800	1300
VV52	VVD52	5000	20	7½	2½	2.5	685	1039
VV53	VVD53	5000	30	7½	2½	2.5	750	1200
VV53S	VVD53S	5000	30	7½	2½	2.5	800	1300
VV54	VVD54	5000	40	7½	2½	2.5	800	1300
VV102	VVD102	10000	20	15	5	4	790	1190
VV103	VVD103	10000	30	15	5	4	850	1300
VV103S	VVD103S	10000	30	15	5	4	900	1400
VV104	VVD104	10000	40	15	5	4	900	1400
VV152	VVD152	15000	20	22½	7½	5.4	835	1225
VV153	VVD153	15000	30	22½	7½	5.4	950	1400
VV153S	VVD153S	15000	30	22½	7½	5.4	1000	1400
VV154	VVD154	15000	40	22½	7½	5.4	1000	1500
Horizontal								
SVA202	DVA202	20000	20	30	10	6.8	1300	1800
SVA203	DVA203	20000	30	30	10	6.8	1350	2000
SVA204	DVA204	20000	40	30	10	6.8	1400	2200
SVA252	DVA252	25000	20	37½	12½	8.3	1400	2000
SVA253	DVA253	25000	30	37½	12½	8.3	1450	2200
SVA254	DVA254	25000	40	37½	12½	8.3	1500	2500
SVA302	DVA302	30000	20	45	15	9.7	1500	2300
SVA303	DVA303	30000	30	45	15	9.7	1600	2700
SVA304	DVA304	30000	40	45	15	9.7	1700	3000
SVA402	DVA402	40000	20	60	20	12.6	1900	2800
SVA403	DVA403	40000	30	60	20	12.6	2000	3100
SVA404	DVA404	40000	40	60	20	12.6	2100	3500
SVA652	DVA652	65000	20	97½	32½	20.0	3000	4000
SVA653	DVA653	65000	30	97½	32½	20.0	3200	4500
SVA654	DVA654	65000	40	97½	32½	20.0	3500	5000
SVA1002	DVA1002	100000	20	150	50	30.0	4000	5000
SVA1003	DVA1003	100000	30	150	50	30.0	4200	5500
SVA1004	DVA1004	100000	40	150	50	30.0	4500	6000

*Pump performance may exceed but will not be less than shown.

Type E Hoffman-Economy Condensation Pumps



For returning condensate from any gravity heating system where return lines are approximately 12 inches or more above the pump floor level.

Pump is vertical flexible coupled unit. Bronze impeller. Renewable bronze wearing rings. Stainless steel shaft. Renewable bearings, ball thrust bearing. Working assembly removable without breaking pipe connections. Pump unit bolted to the cast iron, corrosion-resistant tank, which eliminates any piping between pump and tank.

Motor located high above floor. Ball bearing, 40° continuous duty, 1750 rpm. with ample overload capacity.

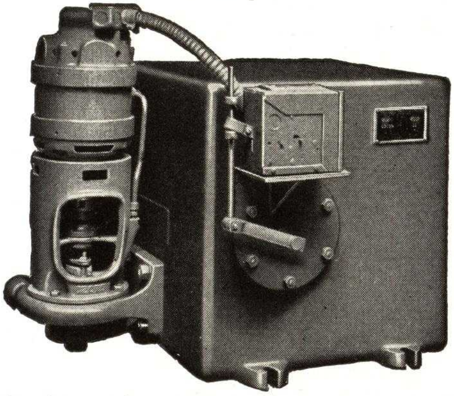
Float switch is heavy duty type with double break silver butt contacts. Float switch operating mechanism adjustable for various water levels. All operating parts of corrosion-resisting material. Flexible coupling between pump and motor. Another motor may be substituted for original motor without disassembling the pump.

In ordering state: type of pump required; total square feet of direct cast iron radiation or equivalent; electric current available—a.c. or d.c.; exact voltage; if a.c. specify whether 1, 2 or 3-phase and also whether 25, 50 or 60-cycle; maximum pressure against which pump must discharge; total length and size of piping between pump outlet and boiler; and difference in elevation between pump outlet and boiler water line.

Pump and Type No.	Capacity Sq. Ft. Direct C.I. Rad. or Equiv.	Cap. Lbs. Condensate Per Hr.	Dis. Press. Lbs. Per Sq. In. at Pump Outlet	Pump Cap. Gals. Per Min.	Receiver Cap. Gals.	Size Inlet In.	Size Discharge Outlet In.	Motor Hp.
10	1000	250	10	1½	10	2	1	¼
11	1000	250	15	1½	10	2	1½	½
12	1000	250	20	1½	10	2	1½	¾
20	2000	500	10	3	10	2	1	¼
21	2000	500	15	3	10	2	1½	½
22	2000	500	20	3	10	2	1½	¾
40	4000	1000	10	6	26	2	1	¼
41	4000	1000	15	6	26	2	1½	½
42	4000	1000	20	6	26	2	1½	¾
60	6000	1500	10	9	26	2	1	¼
61	6000	1500	15	9	26	2	1½	½
62	6000	1500	20	9	26	2	1½	¾
80	8000	2000	10	12	26	2	1	¼
81	8000	2000	15	12	26	2	1½	½
82	8000	2000	20	12	26	2	1½	¾
100	10000	2500	10	15	26	2	1	¼
101	10000	2500	15	15	26	2	1½	½
102	10000	2500	20	15	26	2	1½	¾
150	15000	3750	10	22½	43	2½	1	¼
151	15000	3750	15	22½	43	2½	1½	½
152	15000	3750	20	22½	43	2½	1½	¾
153	15000	3750	30	22½	43	2½	1½	1½
200	20000	5000	10	30	43	2½	1½	½
201	20000	5000	15	30	43	2½	1½	¾
202	20000	5000	20	30	43	2½	1½	1
203	20000	5000	30	30	43	2½	1½	1½
250	25000	6250	10	37½	43	3	1½	½
251	25000	6250	15	37½	43	3	1½	¾
252	25000	6250	20	37½	43	3	1½	1
253	25000	6250	30	37½	43	3	1½	2
300	30000	7500	10	45	60	3	1½	½
301	30000	7500	15	45	60	3	1½	¾
302	30000	7500	20	45	60	3	1½	1
303	30000	7500	30	45	60	3	1½	2

Information on capacities 40000 to 65000 sq. ft. on request.

Type EC Hoffman-Economy Condensation Pumps



For returning condensate from any gravity heating system where return lines are approximately 12 inches or more above the pump floor level. Operated at a high speed.

Motor located high above floor. Ball bearing, 40° continuous duty, 3450 rpm. with ample overload capacity. Pump unit bolted to cast iron, corrosion-resistant tank.

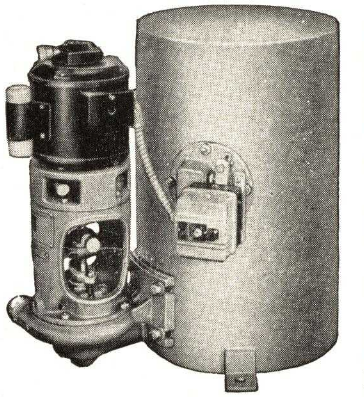
In ordering state: type of pump required; total square feet of direct cast iron radiation or equivalent; electric current available—a.c. or d.c.; exact voltage; if a.c. specify whether 1, 2 or 3-phase and also whether 25, 50 or 60-cycle; maximum pressure against which pump must discharge; total length and size of piping between pump outlet and boiler; and difference in elevation between pump outlet and boiler water line.

Pump and Type No.	Cap. Sq. Ft. Direct C.I. Rad. or Equiv.	Cap. Lbs. Condensate Per Hr.	Dis. Press. Lbs. Per Sq. In. at Pump Outlet	Pump Cap. Gals. Per Min.	Receiver Cap. Gals.	Size Outlet In.	Size Discharge Outlet In.	Motor Hp.
11	1000	250	15	1½	10	2	1	½
12	1000	250	20	1½	10	2	1	¾
21	2000	500	15	3	10	2	1	½
22	2000	500	20	3	10	2	1	¾
41	4000	1000	15	6	26	2	1	½
42	4000	1000	20	6	26	2	1	¾
43	4000	1000	30	6	26	2	1	¾
61	6000	1500	15	9	26	2	1	½
62	6000	1500	20	9	26	2	1	¾
63	6000	1500	30	9	26	2	1	¾
64	6000	1500	40	9	26	2	1	1
65	6000	1500	50	9	26	2	1½	1½
66	6000	1500	60	9	26	2	1½	3
81	8000	2000	15	12	26	2	1	½
82	8000	2000	20	12	26	2	1	¾
83	8000	2000	30	12	26	2	1	¾
84	8000	2000	40	12	26	2	1	1
85	8000	2000	50	12	26	2	1½	1½
86	8000	2000	60	12	26	2	1½	3
101	10000	2500	15	15	26	2	1	½
102	10000	2500	20	15	26	2	1	¾
103	10000	2500	30	15	26	2	1	1
104	10000	2500	40	15	26	2	1	1½
105	10000	2500	50	15	26	2	1½	1½
106	10000	2500	60	15	26	2	1½	3
151	15000	3750	15	22½	43	2½	1	½
152	15000	3750	20	22½	43	2½	1	¾
153	15000	3750	30	22½	43	2½	1	1
154	15000	3750	40	22½	43	2½	1	1½
155	15000	3750	50	22½	43	2½	1½	2
156	15000	3750	60	22½	43	2½	1½	3
203	20000	5000	30	30	43	2½	1½	1½
204	20000	5000	40	30	43	2½	1½	1½
205	20000	5000	50	30	43	2½	1½	2
206	20000	5000	60	30	43	2½	1½	3
253	25000	6250	30	37½	43	3	1½	1½
254	25000	6250	40	37½	43	3	1½	2
255	25000	6250	50	37½	43	3	1½	3
256	25000	6250	60	37½	43	3	1½	3
303	30000	7500	30	45	60	3	1½	1½
304	30000	7500	40	45	60	3	1½	2
305	30000	7500	50	45	60	3	1½	3
306	30000	7500	60	45	60	3	1½	3

Information on capacities 40000 to 65000 sq. ft. on request.

Type S Hoffman-Economy Condensation Pumps

With Steel Receiver



For returning condensate from any gravity heating system where return lines are approximately 12 inches or more above pump floor level, where service is not so severe and cast iron tanks are not required.

Pump: Flexible coupling, vertical type with bronze impeller.

Receiver: Welded copper bearing steel.

Motor: Ball bearing 40° continuous duty—1750 rpm. for 10-pound units, and 3450 rpm. for higher pressures. New improved starting switch. Motors can be changed without disassembling pump.

Duplex unit: Furnished with 2 pumps installed in a single tank.

Prices on 25, 40 and 50-cycle units on application. When explosion-proof, moisture-proof or totally enclosed motors are specified, prices on application.

Single Units

Disch. Press. at Pump Outlet Lb. per Sq. In.	No.	Single Phase Each	2 & 3 Phase Each	D.C. Each	Pump Cap. GPM.	Receiver Cap. Gal.	Motor Hp.	Pipe Conn. In. Inlet	Pipe Conn. In. Outlet	Approx. Floor Space In.	Approx. Ship. Wt. Lb.
1000 Square Feet E.D.R. Capacity											
10	10S	$87.	$94.	$100.	1½	15	¼	2	1	19x25¼	152
15	11S	120.	123.	133.	1½	15	½	2	1	19x25¼	152
20	12S	130.	129.	149.	1½	15	¾	2	1	19x25¼	180
2000 Square Feet E.D.R. Capacity											
10	20S	$88.	$97.	$105.	3	15	¼	2	1	19x25¼	152
15	21S	120.	123.	133.	3	15	½	2	1	19x25¼	152
20	22S	135.	134.	154.	3	15	¾	2	1	19x25¼	185
4000 Square Feet E.D.R. Capacity											
10	40S	$92.	$100.	$112.	6	15	¼	2	1	19x25¼	152
15	41S	123.	125.	135.	6	15	½	2	1	19x25¼	152
20	42S	140.	139.	159.	6	15	¾	2	1	19x25¼	190
30	43S	150.	149.	169.	6	15	¾	2	1	19x25¼	195
6000 Square Feet E.D.R. Capacity											
10	60S	$100.	$103.	$115.	9	21	¼	2	1	22x28¼	180
15	61S	125.	130.	140.	9	21	½	2	1	22x28¼	180
20	62S	145.	142.	162.	9	21	¾	2	1	22x28¼	275
30	63S	160.	151.	171.	9	21	¾	2	1	22x28¼	318
8000 Square Feet E.D.R. Capacity											
10	80S	$108.	$115.	$125.	12	21	¼	2	1	22x28¼	185
15	81S	130.	135.	145.	12	21	½	2	1	22x28¼	190
20	82S	150.	149.	169.	12	21	¾	2	1	22x28¼	300
30	83S	170.	168.	188.	12	21	¾	2	1	22x28¼	320

Duplex Units

Disch. Press. at Pump Outlet Lb. per Sq. In.	No.	Single Phase Each	2 & 3 Phase Each	D.C. Each	Pump Cap. GPM.	Receiver Cap. Gal.	Motor Hp.	Pipe Conn. In. Inlet	Pipe Conn. In. Outlet	Approx. Floor Space In.	Approx. Ship. Wt. Lb.
1000 Square Feet E.D.R. Capacity											
10	10SD	$155.	$168.	$180.	1½	15	¼	2	1	27x27	230
15	11SD	210.	220.	240.	1½	15	½	2	1	27x27	230
20	12SD	230.	228.	258.	1½	15	¾	2	1	27x27	270
2000 Square Feet E.D.R. Capacity											
10	20SD	$157.	$175.	$195.	3	15	¼	2	1	27x27	230
15	21SD	210.	220.	240.	3	15	½	2	1	27x27	230
20	22SD	235.	233.	263.	3	15	¾	2	1	27x27	275
4000 Square Feet E.D.R. Capacity											
10	40SD	$164.	$178.	$200.	6	15	¼	2	1	27x27	230
15	41SD	230.	240.	260.	6	15	½	2	1	27x27	230
20	42SD	250.	248.	278.	6	15	¾	2	1	27x27	290
30	43SD	272.	270.	300.	6	15	¾	2	1	27x27	300
6000 Square Feet E.D.R. Capacity											
10	60SD	$188.	$188.	$210.	9	21	¼	2	1	30x30	270
15	61SD	240.	250.	270.	9	21	½	2	1	30x30	270
20	62SD	266.	264.	294.	9	21	¾	2	1	30x30	415
30	63SD	276.	274.	304.	9	21	¾	2	1	30x30	480
8000 Square Feet E.D.R. Capacity											
10	80SD	$198.	$214.	$230.	12	21	¼	2	1	30x30	275
15	81SD	242.	252.	280.	12	21	½	2	1	30x30	310
20	82SD	276.	274.	304.	12	21	¾	2	1	30x30	450
30	83SD	286.	280.	310.	12	21	¾	2	1	30x30	480

Type U Hoffman-Economy Vertical Underground Condensation Pumps

HOFFMAN
ECONOMY

Used where low returns are to be handled.

Pump: Vertical submerged type, bronze fitted, with upper ball thrust bearing. Lower bearing is easily renewable without removing impeller from shaft. Enclosed bronze impeller.

Receiver: Cast iron tank, which may be installed in cinder fill, without concrete pit lining. Steel tanks can be furnished.

Inlet: Standard receivers have single inlet 9 inches below top cover. Inlet can be located otherwise but will delay shipment. Additional inlets furnished at extra charge.

Motor: Continuous duty, 40°. Available with either single, 2 or 3 phase a-c. motors or with d-c. motors.

Float Switch: Heavy duty type with double break silver butt contacts. Float switch mechanism adjustable for various water levels.

Duplex Unit: Furnished with 2 pumps installed in a single tank.

Explosion-proof, moisture-proof or totally enclosed motors may be supplied on special order.

Disch. Press. at Pump Outlet Lb. per Sq. In.	Single Units No.	Single Units Receiver, In. Diam.	Single Units Receiver, In. Flange Diam.	Single Units Approx. Ship. Wt. Lb.	Duplex Units No.	Duplex Units Receiver, In. Diam.	Duplex Units Receiver, In. Flange Diam.	Duplex Units Approx. Ship. Wt. Lb.	Receiver In. Depth	Pump Cap. GPM.	Motor Hp.	Pipe Conn. In. Inlet	Pipe Conn. In. Outlet
2000 Square Feet E.D.R. Capacity													
10	U- 20	16	20	400	UD- 20	30	35	750	30	3	¼	3	1¼
15	U- 21	16	20	560	UD- 21	30	35	1000	30	3	½	3	1½
20	U- 22	16	20	650	UD- 22	30	35	1200	30	3	¾	3	1½
30	U- 23	16	20	700	UD- 23	30	35	1300	30	3	1	3	1¼
40	U- 24	16	20	850	UD- 24	30	35	1600	30	3	1½	3	1¼
50	U- 25	16	20	950	UD- 25	30	35	1700	30	3	2	3	1¼
6000 Square Feet E.D.R. Capacity													
10	U- 60	16	20	410	UD- 60	30	35	770	36	9	¼	3	1¼
15	U- 61	6	20	580	UD- 61	30	35	1080	36	9	½	3	1½
20	U- 62	16	20	700	UD- 62	30	35	1300	36	9	¾	3	1½
30	U- 63	16	20	750	UD- 63	30	35	1400	36	9	1	3	1¼
40	U- 64	16	20	900	UD- 64	30	35	1700	36	9	1½	3	1¼
50	U- 65	16	20	1000	UD- 65	30	35	1900	36	9	2	3	1¼
10000 Square Feet E.D.R. Capacity													
10	U-100	18	22	450	UD-100	36	42	850	36	15	¼	3	1¼
15	U-101	18	22	650	UD-101	36	42	1200	36	15	½	3	1½
20	U-102	18	22	750	UD-102	36	42	1400	36	15	¾	3	1½
30	U-103	18	22	900	UD-103	36	42	1700	36	15	1	3	1¼
40	U-104	18	22	1000	UD-104	36	42	1900	36	15	1½	3	1¼
60	U-106	18	22	1200	UD-106	36	42	2200	36	15	3	3	1¼
100	U-109	18	22	1300	UD-109	36	42	2400	36	15	5	3	1¼
15000 Square Feet E.D.R. Capacity													
10	U-150	20	24	550	UD-150	36	42	1000	36	23	½	3	1¼
15	U-151	20	24	750	UD-151	36	42	1400	36	23	½	3	1½
20	U-152	20	24	850	UD-152	36	42	1600	36	23	¾	3	1½
30	U-153	20	24	950	UD-153	36	42	1700	36	23	1½	3	1¼
40	U-154	20	24	1300	UD-154	36	42	2400	36	23	1½	3	1¼
60	U-156	20	24	1400	UD-156	36	42	2600	36	23	3	3	1¼
100	U-159	20	24	1500	UD-159	36	42	2800	36	23	5	3	1¼
25000 Square Feet E.D.R. Capacity													
10	U-250	24	28	650	UD-250	36	42	1200	36	38	½	4	1½
15	U-251	24	28	850	UD-251	36	42	1600	36	38	¾	4	1½
20	U-252	24	28	1000	UD-252	36	42	1900	36	38	1	4	1½
30	U-253	24	28	1100	UD-253	36	42	2000	36	38	1½	4	1½
40	U-254	24	28	1400	UD-254	36	42	2600	36	38	1½	4	1½
60	U-256	24	28	1500	UD-256	36	42	2800	36	38	3	4	1½
100	U-259	24	28	1600	UD-259	36	42	3000	36	38	5	4	1½
40000 Square Feet E.D.R. Capacity													
10	U-400	30	35	850	UD-400	36	42	1600	36	60	¾	4	1½
15	U-401	30	35	1100	UD-401	36	42	2000	36	60	1	4	1½
20	U-402	30	35	1200	UD-402	36	42	2200	36	60	1½	4	1½
30	U-403	30	35	1300	UD-403	36	42	2400	36	60	2	4	1½
60	U-406	30	35	1700	UD-406	36	42	3000	36	60	5	4	1½
100	U-409	30	35	1800	UD-409	36	42	3300	36	60	7½	4	1½

Control Circuit Information

Series 10—Refers to the control circuit in which two contacts are made in sequence to start, and break in reverse sequence to stop. This circuit is particularly adaptable to relay operations. The thermostat and controller wiring is three-wire, low voltage.

Series 20—Refers to the control circuit in which one circuit is made when the controller calls for heat and another circuit is made when the controller is satisfied. A Series 20 device does not return to the Off position on power failure. This circuit is particularly adaptable to motor operation. The thermostat and controller wiring is three-wire, low voltage, but is entirely different from Series 10.

Series 40—Covers devices used in two-wire line voltage circuits, for special applications and for direct control.

Series 50—Refers to devices that are non-electrical.

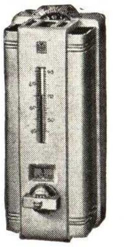
Series 60—Refers to the control circuit in which one contact is made for starting line voltage controlled equipment and another contact is made for stopping line voltage controlled equipment. In other words, Series 60 is line voltage equivalent to Series 20.

Floating control typifies the circuit wherein a reversing motor will move in the direction determined by the thermostat or controller, as long as the contacts are made, and will be reversed as the contacts in the thermostat are reversed; with a stand-by occuring when both circuits in the thermostat or controller are broken.

Series 80—Refers to devices having a two-wire low voltage control circuit. In other words, Series 80 is the low voltage equivalent for Series 40.

Series 90—Applies to modulating or proportioning equipment which provides for modulation of the device under control in proportion to the demands of the thermostat or controller. This is accomplished through the use of potentiometer type instruments.

Minneapolis-Honeywell Da-Nite Acratherms



A timing mechanism with an open contact type thermostat which will provide lowered night temperature, when manually reset before retiring, with automatic return to normal daytime temperature at any desired time in the morning.

Max. low temp. interval is ten hours.

Scale range: day 55 to 85°F., night 45 to 75°F. Adjustable differential for Type T109A, 1½°F. factory setting and for Type T209A, 1½°F. with heat leveling.

Centigrade range avail. at no extra cost. Locking device for day and night dials at extra cost. Locking cover available at no extra cost. Low voltage a.c. only.

Height, 5¾ inches; width, 2¼ inches; depth, 2⅝ inches. Weight, 1½ pounds.

Silver bronze finish unless otherwise specified.

Type **T109A** (Series 10)	each	**$19.10**
Type **T209A** (Series 20)	each	**19.10**

Type T19A Minneapolis-Honeywell Twin Acratherms

This device combines two bi-metal open contact, low voltage, thermostats in one unit, operating independently of each other, and is used with a manual or automatic changeover switch for day-night control. Available in Series 10 to actuate M-H relays, valves, or motors. Compact and attractively designed.

Locking cover and locks for both dials are standard equipment.

Low voltage a.c. only. Not applicable to d.c. Range; day, 55° to 85°F.; night, 50° to 74°F. Height, 4⅜ inches; width, 2¼ inches; depth, 1⅝ inches.

Silver bronze finish. Weight ¾ pound.

When ordering, specify: type number, range, and voltage and frequency of device Acratherm is to control.

Type T19A (Series 10) .... each **$19.30**

Minneapolis-Honeywell Acratherms

A room thermostat that is available in Series 10, Series 20 and Series 80 to actuate relays, valves and motors employing these circuits. It is bi-metal actuated and employs platinum iridium open contacts.

Detachable wall plate provides for easy installation and wiring can be done without danger of short circuiting. Temperature dial and cover can be locked.

A visible scale and differential adjustment means are standard equipment.

Standard scale range is 55 to 85°F. Range 35 to 65°F. (or equivalent in Centigrade) available at extra cost. Not available for d.c.

Overall dimensions; height, 4⅜ inches; width, 1¾ inches; depth, 1⅞ inches.

Silver bronze finish. Weight, ¾ pounds.

Special features available: Locking cover. Night cutoff. No extra cost.

When ordering, specify: (1) type number; (2) range; (3) type number, voltage, and frequency of device Acratherm is to control; and (4) special features required.

Type **T11A**, Heat Accelerated Series 10	each	**$9.60**
Type **T21A**, Heat Leveling Series 20	each	**9.60**
Type **T81A**, Heat Leveling Series 80	each	**9.60**

Minneapolis-Honeywell Thermostats

Horizontal design, with self-enclosed non-magnetic switch. Can be locked by removing temperature setting knob. Positive on feature available.

Dimensions, inches; height, 2⅞; depth, 2$\frac{3}{16}$; width including knob, 5. Weight, 1½ pounds.

Finish, silver screen on grey sub base; special finishes available at extra cost—submit sample.

No. TA42A

Makes contact on temperature fall (Series 40).

*Electrical rating: Single pole, single throw; 10 amperes at 115–230 v. a.c., 1 hp. a.c. at 115 v., 1½ hp. a.c. at 230 volts.

Ranges, 45–75, 55–85°F. and Centigrade equivalent at no extra cost; 25–55, 35–65, 65–95, 75–105°F. and Centigrade equivalents available at extra cost.

No. TA42A .... each **10.80**

No. TA42B

Makes contact on temperature rise (Series 40).

*Electrical rating: Single pole, single throw or single pole, double throw; 4 amperes at 115–230 volts a.c., ¼ hp. a.c. at 115 volts, ¾ hp. a.c. at 230 volts.

Ranges, 45–75 and 65–95°F. and Centigrade equivalents available at no extra cost; 75–105°F. and Centigrade equivalents available at extra cost.

No. TA42B .... each **$10.80**

Differential both types, non-adjustable approx. 2°F.

*Also, d.c., 2 amperes at 24 volts, 1.5 amperes at 32 volts, .2 ampere at 115 volts, .1 ampere at 230 volts.

No. Q51A Minneapolis-Honeywell Thermostat Guards

For plain vertical type thermostats.

Allen head locking device prevents removal of the guard without the use of the special wrench furnished.

Will fit all plain type thermostats, but cannot be used with clock type thermostats.

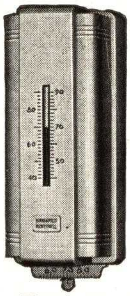
Height, 8 inches; width, 4½ inches; depth, 3⅜ inches.

Black Kristo Krak finish.

Shipping weight, 2 pounds.

No. Q51A .... each **$4.80**

Minneapolis-Honeywell Snap Action Thermostats



A snap action open contact thermostat actuated by a bi-metallic element. Modern in design; extremely accurate in operation.

For 2-wire line voltage applications of limited capacity designed for use with Series 40 lockswitches, relays, solenoid and motorized valves.

Rating in Amperes

Volts	Running Current A.C.	Running Current D.C.	Locked Rotor A.C.
115	4.6	.13	20
230	2.3	.07	10

T44A Range 44–76°F. or 54–86°F. T44B Range 64–96°F. Differential adjustable from 1½ to 6°F. Has silver bronze finish.

Available for use as a cooling control. In ordering, specify type number, electrical motor rating (including normal running current and voltage and frequency of the motor as well as type number of the device thermostat is to control) and special features if required. Shipping weight, ¾ pound.

*Type 44A (Series 40)..... ....each **$10.00**
Type T44B (Series 40), for Cooling Control....each **10.00**

*Centigrade scale equivalent to standard scale available at no extra charge. Other ranges available at extra cost.

Minneapolis-Honeywell Pressuretrols

Mercury Switch Type

Provides high limit protection for steam and vapor systems. Has visible scale, external adjustment means for cut in and cutout pressures, and internal terminal connections. The actuating bellows are within the case.

The range of all P models is 0 to 10 pounds and L models have a range of 2 to 50 pounds or 5 to 150 pounds with an additional pressure range of 10 to 300 pounds available at $4.90 extra.

Cut-in pressure setting of Nos. L104A, P104A, L204A, P204A, L404A, P404A, and L604A plus the differential setting equals cutout pressure. Cutout pressure of Nos. L104B, P104B, L404B and P404B plus the differential setting equals cut-in pressure.

Rating in Amperes

	Nos. P404A and P404B, L404A and L404B				No. L604A	
	Running Current		Locked Rotor		Running Current	
Volts	A.C.	D.C.	A.C.	D.C.	A.C.	D.C.
115	7.4	2.5	44.5	25	1	1
230	5.1	1.3	30.6	13	.5	.5

All other Nos. are for low voltage a.c. only.

Pipe tapping, ¼-inch pipe threads.

Dimensions: Approximate height, 4½ inches for P types, 3⅞ inches for L types; width, 3½ inches; depth, 2½ inches.

Shipping weight, P models 1¾ pounds; L models 3 pounds.

No.	Series	Action on Pressure Rise	Each
P104A	10	Opens Circuit	**$7.20**
P104B	10	Opens Circuit	**7.20**
P204A	20	Opens Burner Circuit	**7.20**
P404A	40	Opens Circuit	**7.20**
P404B	40	Closes Circuit	**7.20**
L104A	10	Opens Circuit	**13.20**
L104B	10	Closes Circuit	**13.20**
L404A	40	Opens Circuit	**13.20**
L404B	40	Closes Circuit	**13.20**
L604A	60 20	Closes Stopping Circuit Opens Stopping Circuit	**14.40**

For knob for hand instead of screwdriver scale setting, add sixty cents.

Kilogram equivalents for all P models shown on same scale. Kilogram equivalents for L models at extra cost.

Also used as unit heater controllers.

Type L411A Minneapolis-Honeywell Vacuumstats

This control answers the demand for a pressure-vacuum instrument. It is recommended for use only on vacuum pump equipped heating jobs.

Line voltage 2-wire.

Current rating: 10 amperes, 115 volts; 5 amperes, 230 volts.

Motor rating, 1 hp.; r.i.; ½ hp. split-phase and ¼ hp. d.c.

Cut-in range 22 inches vacuum to 35 pounds pressure. Differential 4 inches vacuum to 30 pounds pressure.

Cut-in pressure plus differential equals cut-out pressure.

Height, 3⅞ inches. Width, 3½ inches. Depth, 2½ inches. Weight, 3 pounds.

Type L411A (Series 40)....................each **$13.20**

Type L Minneapolis-Honeywell Vaporstats

Used primarily as high-limit control on vapor heating systems.

Range: all types, 0 to 16 oz.; Types L408A and L408B, 0 to 4 pounds. Differential adjustable 2 to 16 oz. Types L108A and L108B, low voltage. Types L408A and L408B, 10 amp. 115 volts, 5 amp. 230 volts, 1 hp. a.c. ¼ hp., d.c. Type L608A, 1 amp. 115/230 volts, 1/20 hp., repulsion induction, 1 phase and d.c.

Height, 3⅞ inches. Width, 3½ inches. Depth, 2½ inches.

Type	Each	Contact Break	Series	Wt., Lb.
L108A	**$13.20**	On Pressure Rise	10	3¼
L108B	**13.20**	On Pressure Drop	10	3¼
L408A	**13.20**	On Pressure Rise	40	3¼
L408B	**13.20**	On Pressure Drop	40	3¼
*L608A	**13.20**	On Pressure Rise	20 or 60	3½

*Single pole, double throw.

Minneapolis-Honeywell Immersion Aquastats

Mercury Switch Type

For summer-winter hot water hook-ups or other usage where close control is necessary. Available for both horizontal and vertical mounting. Has external adjustment, visible scale, detachable well, internal wiring connections and snap-on cover. Thermostatic bi-metal actuation is employed.

Range, all numbers except No. L454A, and No. L144B, 60 to 220°F. and 80 to 240°F. (No. L144B, 60-220°F. only). Differential, L144 non-adjustable 5°F. Others, except L454, non-adjustable 10°F.; No. L454A, 80 to 220°F. with adjustable differential 12 to 40°F. Special Fahrenheit and all Centigrade ranges available for all numbers at extra cost.

Electrical rating, Nos. L144A, L144B and L244A, low voltage; Nos. L444A, L444B and L454A.

Rating in Amperes:

	115 Volts		230 Volts	
	Running Current	Locked Rotor	Running Current	Locked Rotor
Alternating Current.......	7.4	44.5	5.1	30.6
Direct Current............	2.5	25.0	1.3	13.0

Protecting well, all numbers except No. L454A, 2½-inch insertion length including ¾-inch pipe threads; No. L454A, 3¾-inch insertion length including ½-inch pipe threads. Available in special lengths at extra cost.

Height of case, 4⅜ in.; width, 3 in.; depth, 2⅛ in.

Shipping weight, 2 pounds.

No.	Description	Each
L144A	Breaks Contact on Temp. Rise (Series 10)..	**$8.40**
L144B	Makes Contact on Temp. Rise (Series 10)..	**8.40**
L244A	Stops Burner on Temp. Rise (Series 20)....	**8.40**
L444A	Breaks Contact on Temp. Rise (Series 40)...	**8.40**
L444B	Makes Contact on Temp. Rise (Series 40)...	**8.40**
L454A	Same as No. L444A, but for Vertical Mounting	**12.00**
L454B	Same as No. L444B, but for Vertical Mounting	**12.00**

Minneapolis-Honeywell Immersion Aquastats

Recommended for summer-winter hot water hook-ups or other usage where close control is necessary. Specially designed with proper terminals to use with the M-H Series 10 and 20 circuits. For horizontal and vertical mounting. Has external adjustment, visible scale, detachable well, internal wiring connections, and snap-on cover. Thermostatic bi-metal actuation is employed.

Range, 60–220°F. or 80–240°F., specify when ordering. Available in Centigrade equivalents at extra cost. Differential is adjustable 10–20°F. Electrical rating, low voltage.

Protecting well, 2½-inch insertion length including ¾-inch pipe threads. Available in special lengths at extra cost.

Height of case, 4⅜ inches; width 3 inches; depth, 2⅛ inches. Shipping weight, 3 pounds.

No. L170A, Breaks Contact on Temperature Rise (Series 10) . . . . each	$8.40
No. L270A, Stops Burner on Temperature Rise (Series 20) . . . . each	8.40

Minneapolis-Honeywell Surface Aquastats

Mercury Switch Type

Designed for riser mounting and holds the temperature of hot water heating system within safe limits. Usable on pipes that are vertical, horizontal or set at an angle. Has visible scale, internal wiring connections and snap-on cover, and employs thermostatic bi-metal element.

Range 100–200 degrees F. Available in centigrade equivalents at extra cost. Differential is non-adjustable, approximately 10°F.

Electrical rating; Nos. LA 109A and LA209A, low voltage; Nos. LA409A and LA409B rating in amperes:

	115 Volts		230 Volts	
	Running Current	Locked Rotor	Running Current	Locked Rotor
A.C. . . . . amperes	7.4	44.5	5.1	30.6
D.C. . . . . amperes	2.5	25	1.3	13

Shipping weight, 1½ pounds.

No.	Description	Each
LA109A	Breaks Contact on Temp. Rise (Series 10) . .	$7.20
LA209A	Stops Burner on Temp. Rise (Series 20)	7.20
LA409A	Breaks Contact on Temp. Rise (Series 40) . .	7.20
*LA409B	Makes Contact on Temp. Rise (Series 40)	7.20

*Also used as unit heater controllers.

No. LA412A Minneapolis-Honeywell Furnacestats

Mercury Switch Type

Controls the operation of furnace fan and prevents circulation of cold air in the home. Has visible scale and internal wiring connections. Thermostatic bi-metal actuation is used. Range, 50 to 250°F. Adjustable differential approx. 15 to 65°F.

Rating in Amperes

Volts	Running Current A.C.	Running Current D.C.	Locked Rotor A.C.	Locked Rotor D.C.
115	7.4	2.5	44.5	25
230	5.1	1.3	30.6	13

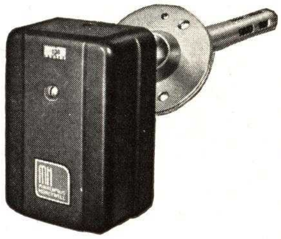
Furnished with swivel mounting bracket; element length, 4⅞ or 10¼ (standard) inches maximum insertion. Furnished without swivel mounting bracket and with holes in back of case for surface mounting; element length, 5⅝ (standard) to 11 inches maximum insertion.

Height of case, 4⅜ inches; width, 3 inches; depth, 2⅛ inches. Shipping weight 2½ pounds.

No. LA412A, Makes Contact on Temp. Rise (Series 40) . . . . each	$7.80

Minneapolis-Honeywell Airstats

Provides high limit protection for warm air furnaces. Keeps temperature within safe limits. To set, turn external slotted screw. Has visible scale, internal wiring connections, snap-on cover. Thermostatic bi-metal actuation is employed. Fixed stops for 200 and 250°F. are available at no extra cost.



Stops prevent operation beyond a predetermined maximum setting to conform to code requirements. Specify setting.

Range, 50 to 350°F. For Centigrade equivalent add $1.20.

Nos. LA119A, LA219A and LA419A have non-adjustable differentials, approximately 25°F. Nos. LA119B, LA219B and LA419B have adjustable differentials, approximately 18 to 100°F.

Electrical rating, Nos. LA119A, LA119B, LA219A and LA219B, low voltage; Nos. LA419A, and LA419B, 10 amperes 115 volts, 5 amperes 230 volts, 1 hp. a.c., ¼ hp. d.c.

Furnished with swivel mounting bracket; element length, 10¼ (standard) to 18 inches maximum insertion. Furnished without swivel mounting bracket and with holes in back of case for surface mounting; element length, 5⅝ (standard) to 11 inches maximum insertion.

Height of case, 4⅜ inches; width, 3 inches; depth, 2⅛ inches. Shipping weight, 2½ pounds.

LA119A	Breaks Contact on Temperature Rise, Non-Adjustable Differential (Series 10)	$7.20
LA119B	Breaks Contact on Temperature Rise, Adjustable Differential (Series 10)	7.80
LA219A	Stops Burner on Temperature Rise, Non-Adjustable Differential (Series 20)	7.20
LA419A	Breaks Contact on Temperature Rise, Non-Adjustable Differential (Series 40)	7.20
LA419B	Breaks Contact on Temperature Rise, Adjustable Differential (Series 40)	7.80

Type C40A Minneapolis-Honeywell Pyrostats

TYPE C
PYROSTAT
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

The pyrostat mounts in the stack or breeching, and in conjunction with the proper protectorelay, provides safe operation of the burner.

A helix of thermostatic metal, responding to changes in temperature, turns a shaft which operates the contact mechanism.

Type C40A, 2-wire line or low voltage, fixed timing to be used with Types R100A, R103A, R105A, R113A, R114A, R161A, R161B, R161C, R171A, and R172A protectorelays.

Weight, 4 pounds. . . . . .each	$17.90

Type R132A Minneapolis-Honeywell Circulator Relays

115–230 Volts, 50 or 60 Cycles

Designed to permit thermostatic control of both a burner and a circulator or fan. Commonly used on summer-winter forced hot water systems.

Has double pole, single throw line voltage switching action.

Rating in Amperes

A.C. Volts	Running Current	Locked Rotor
115	7.4	44.5
230	5.1	30.6

Separate low voltage contacts for controlling Series 10 device.

Case height, 6⅝ inches; width, 4⅜ inches; depth, 3½ inches.

Weight, 3 pounds.

Type R132A. . . . . .each	$10.80

Minneapolis-Honeywell Combination Furnace Controllers

Used to regulate furnace fan operation, either from bonnet temperature or in conjunction with the thermostat. All models equipped with manual fan switch. Element length 4 or 10¼ inches swivel mounting.

Fan differential adjustable 15° to 150°F. on A types; 15° to 130°F. on B types. Limit control range: A types, 100° to 250°F.; B types, 100° to 200°F.

B types equipped with overrun switch; range, 120° to 250°F.

Electrical rating: Types LA101A, LA101B, LA201A, and LA201B limit switch: low voltage. Types LA401A and LA401B limit switch, LA101B, LA201B, and LA401B overrun switch and fan switch for all models:

Rating in Amperes

Volts, A.C.	**115**	**230**
Running Current	7.4	6.5
Locked Rotor	44.5	39

Height, 6⅛ inches; width, 4⅜ inches; depth, including manual switch knob, 2⅞ inches.

When ordering, specify type number.

Type LA**101**A, Makes Series 40 Fan Contact, Breaks Series 10 Limit Control Contact on Temperature Rise....................each **$12.60**

Type LA**101**B, Type LA101A with Overrun Switch. Each.................... **14.40**

Type LA**201**A, Series 40 Fan Contact Makes and Series 20 Contacts Check the Fire on Temperature Rise....................each **12.60**

Type LA**201**B, Type LA201A with Overrun Switch. ....each **14.40**

Type LA**401**A, Makes Series 40 Fan Contact, Breaks Series 40 Limit Control Contact on Temperature Rise....................each **12.60**

Type LA**401**B, Type LA401A with Overrun Switch. ....each **14.40**

No. C418A Minneapolis-Honeywell Pilotstats

Open Contact Type

For handling low or line voltage circuits up to 3 amperes at 250 volts, a.c. It does not automatically close its contacts when the pilot is lighted but must be manually reset by means of the external reset button. The switch contacts cannot close until the pilot is burning correctly.

Incorporates the thermo-electric principle, utilizing the thermo-couple and electro magnet.

Maximum temperature: pilotstat mechanism, 225° (butane-propane service reduces this temperature limit to 175°F.); couple lead, 600°; thermo-couple tip, 1600°.

Thermo-couple available in 18, 24, 30 and 40-inch lengths; straight only. Special lengths, 12 or 48 inches maximum for use with any pilot at 60 cents extra; 72 inches maximum at additional cost. Thermo-couple is detachable.

Has holes in back plate for wall mounting. Height, 4⅜ inches; width, 2½ inches; and depth, 1⅜ inches.

When ordering specify number, type of gas, thermo-couple length, pilot burner assembly and tube length for ladder type burner assembly.

No. C**418**A....................each **$11.45**

Pilot Burners

	For Natural Gas		For Manufactured Gas	
No.	**20402**	**20416**	**20403**	**20417**
Each	**$2.10**	**2.10**	**2.10**	**2.10**
Orifice....inches	0.25	0.25	0.30	0.30
No. Tip	16	15	16	15
Weight....pounds	¼	¼	¼	¼

Minneapolis-Honeywell Relays

For various applications involving the control of line voltage loads from sensitive low voltage thermostats or controllers, or from line voltage controllers of limited capacity.

MINNEAPOLIS HONEYWELL

Complete self-contained units, including a built-in transformer to provide the thermostat circuit.

Type R19A is extensively used in controlling small stoker motors and in making possible the use of Series 10 equipment, including clock thermostats as replacements on older installations,

Furnished for standard 115 or 230-volt, 50 or 60-cycle current. Other commercial voltages or frequencies furnished at an extra charge of $4.80. Cabinet size, 6⅝x4⅜x3½ inches overall.

Rating in Amperes

		115 Volts		230 Volts	
Type	Current	Running Current	Locked Rotor	Running Current	Locked Rotor
R19A	A.C.	7.4	44.5	5.1	30.6
R15A	D.C.	4.5	45	2.3	22.5
R182A	A.C.	13	78	6.5	39
R132A	A.C.	7.4	44.5	5.1	30.6

Type R19A — Control circuit, Series 10. Single throw. Common or separate relation to supply circuit.

Type R19A, Weight, 3 Pounds....................each **$9.60**

Type R15A for D.C.—Control circuit, standard two-wire line voltage. Single throw. Separate relation to supply circuit.

Type R15A, Weight, 3 Pounds....................each **$14.40**

Type R182A—Control circuit, standard series 10–20 or 80 three-wire low voltage. Single throw. Common or separate relation to supply circuit. Sixty cycles.

Type R182A, Weight, 2½ Pounds....................each **$11.40**

Type R132A — Control circuit, series 10, 2-pole single throw. Common relation to supply circuit.

Type R132A, Weight, 3 Pounds....................each **$10.80**

Type R183B Minneapolis-Honeywell Stokerelays

For 1-Hp., 115 Volts, 60 Cycle, A.C. Stoker Motors

MINNEAPOLIS HONEYWELL

A single, compact unit which combines the functions of a relay and simple synchronous timing mechanism.

Should be mounted on a solid vertical wall or column.

Regularly set for a 2 minute operating period every half hour, this may be adjusted to allow an an operating period of ½ to 7½ minutes, and stoker operations of the desired length at either hourly or half hourly intervals. The terminals are arranged to permit control of a separate load circuit if desired.

A replacement unit, cam and timer motor assembly, is available to eliminate any delay in service.

Special timing feature available on special order at extra cost; 15 second to 3¾ minute timing (half of scale marking) at 15 or 30 minute intervals.

Heaters must be used in heat accelerated thermostats.

If motor rating exceeds 1 hp. or is 3-phase, a magnetic starter must be used.

Case dimensions: 6⅜ inches high; 7¾ inches wide; 3½ inches deep.

No. R183B....................each **$18.10**
For 115/50, 230/50 or 60, Single Phase, Add....each **2.40**
For 115-230/25, Single Phase, Add....................each **7.20**

Other semi-standard a-c. voltages and frequencies available at extra cost. D-c. installations require Type L405 Stokerswitch, T42 or T44 Thermostat and R15A Relay or starter (if stoker rating requires).

Minneapolis-Honeywell Protectorelays

MH
MINNEAPOLIS HONEYWELL

Designed for stack mounting and will operate quickly and reliably in low stack temperatures. Normally installed in horizontal position but can be mounted at an angle if necessary. New type bi-metal element imparts straight-line action to simplified Pyrostat mechanism and well spaced terminal block facilitates wiring.

Failure of ignition causes the safety switch to trip and shut down burner, necessitating manual reset before burner may again be started. Safety switch is compensated for varying basement temperature and its timing is unaffected by varying motor loads.

Type RA116A

Recycles on power or flame failure and is for use on constant ignition burners. In event of ignition failure, RA116A will lockout and stop burner 90 seconds after starting.

Standard model for 115 volts, 60 cycles. Other a.c. voltages and frequencies at extra cost.

Shipping weight, 5½ pounds.

Type RA116A................................each **$22.90**

For d.c. use R416A lockswitch with T44A thermostat.

Type R416A, with extra charge for d.c. included, **$31.80**

Type RA117A

Recycles on power or flame failure and is for use on intermittent ignition burners.

Standard model for 115 volts, 60 cycles. Other a.c. voltages and frequencies at extra cost.

Shipping weight, 5¾ pounds.

Type RA117A................................each **$26.50**

For d.c. use R417A lockswitch with T44A thermostat.

Type R417A with extra charge for d.c. included, **$35.90**

Type C57A Minneapolis-Honeywell Protectostats

A 2-wire line or low voltage device to be used with Types R100A, R113A, R114A, R161A, R171A and R172A Protectorelays.

A combustion safety device, which responds to the radiant energy of the flame and is for use with Series 10 controls only.

Its speed of operation and its adaptability to integral mounting has made this device popular as an oil burner control. Operating mechanism consists of a diaphragm, exposed to the flame, and a contact mechanism actuated from expansion and contraction of the diaphragm.

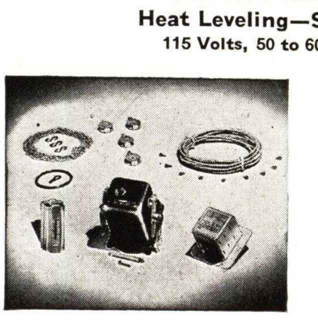
Weight, 6 pounds.

Type C57A..................................each **$19.30**

Type Y101A Minneapolis-Honeywell Electric Janitor Sets

Heat Leveling—Spring Return

115 Volts, 50 to 60 Cycles, A. C.



Designed for controlling the operation of domestic coal-fired heating plants. Used with Series 80, 2-wire low voltage.

Set includes Type M87A spring return motor (which drives damper to checked position in case of power failure), Type T81A acratherm, heat leveling 55°F. to 85°F., and the necessary fittings.

Type Y101A, Shipping weight, 11 lb........per set **$32.50**

For other ac. voltages and frequencies add $2.40.

Minneapolis-Honeywell Damper Induction Motors

115 Volts, 50 or 60 Cycles, A.C.

MH ELECTRIC JANITOR
AUTOMATIC
CLOSED
OPEN

No. M220A

A small, sturdy and efficient motor for application on domestic damper control and zone control installations. Constructed for long life, and when used for light duty damper service, will give trouble-free service.

Available with brackets and linkages for zone control applications.

When the motor circuit in the M87A model is interrupted or when power fails, a powerful spring drives the motor arm to the closed position.

Type M220A. Damper motor, Series 20 two position, unidirectional. Has two crank arms.

Type M220B. Same as M220A except for single crank arm and Series 20 auxiliary switch to provide extra switching functions such as tandem control. Switch enclosed in metal box and mounted at top of case.

Type M87A. Spring return damper motor, Series 80 (two-wire low voltage), closes damper on power failure.

Power consumption, 10 to 20 watts. Manual operation, basement switch standard. Has two crank arms.

Height, 4½ inches; width, less motor arms, 3⅞ inches; depth, 4¼ inches. No. M220B has a depth of 6¼ inches.

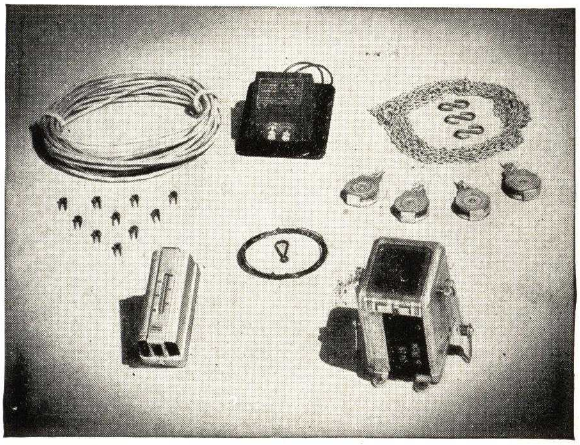
Type	M220A	M220B	M87A
Each	**$18.00**	**24.10**	**22.90**
Maximum Torque....in.-pounds	15	15	*20
Weight................pounds	5	6¼	6¾

*With return spring properly connected.

For other a-c. voltages and frequencies, add $2.40 extra.

External type transformer supplied. Power type plate mounted standard; limited output type with plate or foot mounting available at no extra cost.

Electric Janitor Heat Regulators



For the regulation of domestic coal or coke-fired heating plants. Damper motor receives its direction from room thermostat and supplies the power to operate the furnace dampers.

Standard Model Y100A

Includes a heat-leveling thermostat, damper motor, separate transformer, and all necessary wiring, damper chains, pulleys, etc. The standard room thermostat directs the action of the damper control motor and is a heat-leveling instrument. Weight, 8¼ pounds.

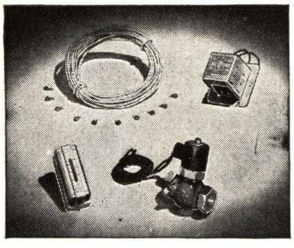
Model Y100A, Complete Outfit..............each **$27.60**

Da-Nite Model Y18A

Includes the Da-Nite heat-leveling thermostat. The Da-Nite thermostat lowers night temperature with automatic return to daytime temperature level in the morning; requires setting each night. Weight, 10 pounds.

Model Y18A, Complete Outfit...............each **$38.50**

Minneapolis-Honeywell Gas Regulators



Type Y77A

Suited to the requirements of small conversion burners, furnaces, etc. Positive night shut-off feature is available in most thermostats where desired. The transformers, cable, and fittings are furnished with the low voltage package. A manual opening feature is available in the valves to permit manual operation during periods of power failure.

The set includes heat leveling snap action No. T81A Acratherm and the two wire low voltage No. V835 or No. V84 solenoid valves. The No. V835 valve is furnished for ½ and ¾-inch sizes, the No. V84 for 1 and 1¼-inch sizes.

Type Y77A Gas Control Package, consists of No. T81A Acratherm, Nos. V835A or V84A, low voltage valve (without manual opening feature), 25 feet of 2-wire cable and wiring staples. Plate mounted power type transformer furnished as standard.

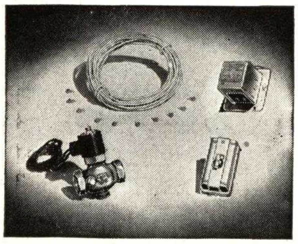
Type Y77C Gas Control Package, consists of above except valves are Nos. V835D or V84C (with manual opening feature).

Both types furnished in 115 volt, 50 or 60 cycle standard. For other a.c. voltages and frequencies, add $2.40 extra.

Size Valves............inches	½	¾	1	1¼
Type Y77A..............each	**$20.90**	**$21.50**	**$25.60**	**$28.30**
Type Y77C..............each	**20.90**	**21.50**	**25.60**	**28.30**
Capacity at .6 Sp. Gr. Gas with .5-Inch Pressure Drop ....cu. ft.	210	295	550	750
Shipping Weight......pounds	6½	6½	8½	13

Type Y78 Minneapolis-Honeywell Da-Nite Gas Regulators

Suited to the requirements of small conversion burners, furnaces, space heaters, floor furnaces, etc.



This set includes the No. T801A Time-O-Stat and either the Type V835 or Type V84 solenoid gas valve. Type V835 valve is furnished for ½ or ¾-inch sizes; Type V84 for 1 and 1¼-inch sizes.

The No. T801A Time-O-Stat provides for manually lowered temperature control to any point between 45° and 55° with automatic return to the normal control point when desired. A switch on the Time-O-Stat for complete night cut-off may easily be removed where installation is made in territories subject to freezing temperatures.

Type Y78A Time-O-Stat Gas Package consists of No. T801A Time-O-Stat, Type V835A or Type V84A low voltage valve, without manual opening feature, 25 feet of 2-wire cable and wiring staples. Plate mounted, power type transformer furnished as standard.

Type Y78C Time-O-Stat Gas Package is the same as Type 78A except valves are Type V835D or Type V84C, with manual opening feature.

Voltage and frequency: 115 volts, 50 or 60 cycles standard; for other a.c. voltages and frequencies, $2.40 extra.

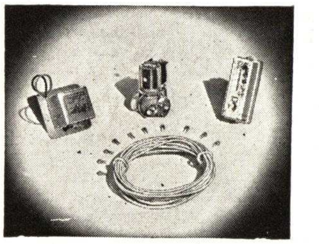
Transformer: Plate mounted power type transformer standard. Foot mounting optional; limited output type with plate or foot mounting available at no extra cost.

Size Valve................in.	½	¾	1	1¼
Type Y78A..............each	**$21.60**	**22.20**	**24.60**	**27.60**
Type Y78C..............each	**21.60**	**22.20**	**24.60**	**27.60**
Shipping Weight..........lb.	6¾	6¾	13	14

Capacity, .6 Specific Gravity Gas .5-Inch Pressure Drop

Size Valve.............inches	½	¾	1	1¼
Cubic Feet..................	210	295	550	770

Minneapolis-Honeywell Gas Control Sets



Type Y26A

Provides low cost automatic control for small conversion burners and small gas fired space heaters to replace existing manual control installation. Has standard model valve, 115 volts, 50 or 60 cycles. Size, ¾ inch. Type Y121A set consists of Type T11A Acratherm and Type V16A Solenoid gas valve. Type Y26A set consists of Type T109 Da-Nite Acratherm and Type V16A gas valve. Shipping weight, 8 pounds.

Type....................................	Y121A	Y26A
Per Set..................................	**$27.70**	**37.20**

For other a.c. voltages and frequencies add $2.40. Not available for d.c.

Minneapolis-Honeywell Diaphragm Gas Valves

Screwed Ends

Has a 3-way pilot valve, which controls the main valve, and is operated by a relay armature and coil assembly to insure positive opening and closing of the ports. Operating parts of the pilot valve are not in the gas circuit and gas bleeds momentarily on the opening cycle only.

No. V148A

Valve may be obtained with a device for manual operation in the event of power failure or before power is available and the Series 10 valves are so designed that when power is restored the valve will automatically respond to the control of the thermostat.

Both angle and straight through patterns are available. Cast iron main valve body, and brass pilot valve body.

Can be supplied for use with propane or butane gas.

No. V148A. Series 10, with manual opening device and straight through, non-offset valve.

No. V448A. Series 40, without manual opening device; straight through, non-offset valve.

No. V149A. Series 10, with manual opening device and angle offset valve.

Operated on 115 volts, 50 or 60 cycles. Types V148A and V149A include a power type plate transformer. Power consumption: Types V148A and V149A, 4.5 watts; Type V448A, 5.5 watts. Pressure rating, 4 ounces per square inch; 8 ounces for propene or butane. Pilot has two ¼-inch I.P.S. tappings on body.

When ordering specify number, valve size, voltage and frequency, and type of gas.

Types V148A and V448A

Size...................inches	¾	‡1	‡1¼
*Each........................	**$18.10**	**20.10**	**21.40**
†Flow at .5-Inch Pressure Drop	350	700	825
†Flow at 1-Inch Pressure Drop	490	980	1150
Face to Face...........inches	5¾	6¾	6¾
C. L. of Pipe to Top....inches	3⅝	4½	4½
C. L. of Pipe to Bottom.inches	¾	1⅛	1⅛
Overall Width.........inches	4½	5½	5½

Type V149A

Size................................inches	¾
*Each..	**$18.10**
†Flow at.5-Inch Pressure Drop..................	450
†Flow at 1-Inch Pressure Drop..................	635
Center Line of Inlet to Top...............inches	3¾
Center Line of Inlet to Bottom............inches	¾
Overall Width..........................inches	4½
Face of Outlet to Top....................inches	4½

*Price includes transformer for Series 10 models.
†Cubic feet per hour at .6 specific gravity.
‡Type V448A not made.

Minneapolis-Honeywell Solenoid Magnetic Gas Valves

Screwed

Nos. V44 and V84

Nos. V435 and V835

Two-wire type, silent in operation.

Manual opening or closing during power failure is available. This feature allows only two positions fully open or closed.

Valves are straight through type, non-offset. Cast brass body.

Power type transformer. Power consumption 8 to 12 watts.

Pressure rating ¼ pound per square inch. Pilot tapping ¼ inch. Standard voltage—115 volt, 50 or 60 cycle. Other a.c. voltages add $2.40. Nos. V44 and V435 available for d.c. add $2.40.

Regular

Size Inches	*Cap. Cu. Ft. per Hr.	Series 40			Series 80		
		No. V44A Each	No. V435A Each	Wt. Lb.	No. V84A Each	No. V835A Each	Wt. Lb.
½	210	.....	**$9.10**	2½	.....	**†$10.90**	5
¾	295	.....	**9.70**	2½	.....	**† 11.50**	5
1	430	**$13.80**	....	4½	**†$15.60**	.....	4¾
1¼	700	**16.50**	....	4¾	**† 18.30**	.....	5

With Manual Opening Feature

Size Inches	Cap. Cu. Ft. per Hr.	Series 40			Series 80		
		No. V44B Each	No. V435B Each	Wt. Lb.	No. V84C Each	No. V835D Each	Wt. Lb.
½	210	.....	**$9.10**	2½	.....	**†$10.90**	5
¾	295	.....	**9.70**	2½	.....	**† 11.50**	5
1	430	**$13.80**	....	4½	**†$15.60**	.....	4¾
1¼	700	**16.50**	....	4¾	**† 18.30**	.....	5

*Capacity at .5 inch P.D., .6 Sp. Gr. Gas.

†Including transformer.

Minneapolis-Honeywell Magnetic Water Valves

Straight Through Non-Offset Pattern

Designed for use, primarily, on domestic spray type humidifying systems. Will operate against water pressures of 100 pounds per square inch maximum, but is not recommended for automatic boiler feeder use, as a refrigerant flow control, or where the water temperature will exceed 100° if liming is a factor. A liquid temperature of 160° is permissible where liming is not a factor. Maximum pressure is 75 pounds for voltages and frequencies other than 115 and 230 volts, 60 cycles.

Type V437A is for line voltage; type V837A operates on low voltage and is furnished with transformer. Power consumption, running, for both types, 8 watts.

Voltage and frequency, 115 volts, 50 or 60 cycles standard. For d.c. or other a.c. voltages and frequencies, add $2.40.

Valve size, ⅜ inch. Port size, $\frac{3}{32}$ inch.

Conduit outlet position on left-hand side, when facing inlet end; may be adjusted by loosening the clamp nut.

Dimensions: end to end, 2⅜ inches; center line of pipe to top, 3½ inches.

Capacity Table

Inlet Pressure............pounds	**10**	**20**	**30**	**50**	**100**
Capacity...................gpm.	.7	.9	1.1	1.4	1.8

Prices

When ordering, specify Type No., voltage and frequency.

Type...........................	V437A	V837A
Each...........................	**$8.40**	**10.80**
Series.........................	40	80
Weight.....................pounds	1½	6

Minneapolis-Honeywell Motorized Valves

With Valve Position Indicator

115 Volts, 50 or 60 Cycles, A.C.

Modutrol motor, controlled by Series 20 controls ordinarily actuated by changes in pressure, temperature, or relative humidity.

External transformer furnished.

Power consumption: 22 watts for 30 and 60-second timing; 15 watts for 120 and 240-second timing. Motor timing: 30, 60, 120, and 240 seconds.

When ordering, specify voltage and frequency, application (including media, temperature, pressure, etc.), motor timing and special features required.

Type K200B. For tight shut-off service, to control flow of steam, gas, oil, water, brine, etc. Single seated, with bronze body trim. Renewable composition discs.

Size Inches	Screwed Globe Each	Maximum Pressure Lb. per Sq. In.	Size Inches	Screwed Globe Each	Maximum Pressure Lb. per Sq. In.
¼	**$65.60**	125	**1¼**	**$68.60**	60
⅜	**65.60**	125	**1½**	**71.70**	40
½	**65.60**	125	**2**	**76.50**	25
¾	**65.60**	125	**2½**	**88.00**	15
1	**66.80**	85	**3**	**92.80**	10

Type K201C. For high pressure service beyond the rating of the K200B. Used if absolutely tight shut-off is not required to control flow of water, air, or steam. Double seated, bronze body and trim.

Size.....inches	**⅜**	**½**	**¾**	**1**	**1¼**	**1½**
Screwed Straight Through.each	**$72.20**	**72.20**	**72.20**	**75.00**	**77.60**	**80.00**
Max. Press. .lb.per sq. in.	150	150	150	150	150	150

Type K201B. For high pressure service beyond the rating of the K200B valve. Used if absolutely tight shut-off is not required, for controlling flow of water, air, or steam. Double seated high tensile iron globe bodies with duromite bronze trim. Companion flanges not furnished. Available with semi-steel body and KA2 stainless steel trim for high pressure, high temperature media at extra charge.

Size Inches	Screwed Each	Flanged Each	Maximum Pressure Lb. per Sq. In.	Size Inches	Screwed Each	Flanged Each	Maximum Pressure Lb. per Sq. In.
½	**$83.90**	......	150	**2½**	......	**$112.60**	150
¾	**83.90**	**$95.70**	150	**3**	......	**129.10**	145
1	**86.40**	**98.10**	150	**4**	......	**160.60**	105
1¼	**86.40**	**98.10**	150	**5**	......	**182.40**	65
1½	**93.70**	**102.90**	150	**6**	......	**213.40**	60
2	**98.50**	**107.80**	150	...	......	......	...

Type K202A. For high pressures for tight shut-off service, to control flow of water, air, or steam. Single seated, straight through, pilot operated, bronze body, bronze trim.

Size........in.	**½**	**¾**	**1**	**1¼**	**1½**	**2**
Screwed..each	**$71.30**	**71.30**	**86.70**	**89.50**	**91.10**	**103.20**
Max. Press. .lb. per sq. in.	150	150	150	150	150	150

Type K202B. Same as K202A, larger sizes.

	Bronze		Iron Bronze Trim	
Size...............inches	**2½**	**3**	**2½**	**3**
Screwed.............each	**$128.00**	**164.80**	**207.70**	**215.40**
Max. Press. .lb. per sq. in.	150	150	150	150

Type K202C. Same as K202A with iron body, bronze trim.

Size.......inches	**2½**	**3**	**4**	**5**	**6**
Flanged.....each	**$207.70**	**215.40**	**258.90**	**352.40**	**421.70**
Max. Press. ..lb. per sq. in.	125	125	125	125	125

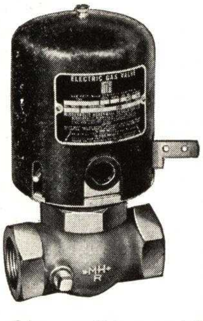
Pressures above are based on 60-second motor timing.

Available for 230 volts, 50 or 60 cycles at no extra charge. For 115 and 230 volts, 25 cycles, add $12.

Auxiliary Switch: Toggle switch type S.P.D.T., 6 amp. 125 volts, 3 amp. 250 volts, add $3.60; Mercury switch type Q52B, 1 S.P.D.T. switch, add $6.00; Q52D, 2 S.P.D.T. switches, add $8.40, for 8 amp. 115 volts, or 4 amp. 230 volts. Ratings are for a.c. voltage.

Series 10 Minneapolis-Honeywell Motorized Gas Valves

Screwed Ends



For the control of gas burning equipment in boilers and furnaces for both domestic and small industrial applications.

Incorporates a locking screw in the secondary air arm, which when left in, permits opening valve manually when arm is depressed. When manually opened during a power failure period, valve recycles as soon as power is restored. With locking screw removed valve cannot be opened by manually depressing damper arm. This last arrangement is adaptable to forced warm air installations. Low voltage motor is of two-coil type utilizing both coils on opening of valve but holding open on only one coil.

Damper arm lowers when valve opens.

Not recommended for final shut-off service when valve must remain energized continuously.

Straight through pattern, non-offset.

Leakage type transformer.

Pressure Rating. ¼-pound per square inch except 8-ounce for propane and butane.

Timing: opening, 5 seconds; closing, 2 to 3 seconds.

Pilot tapping, ¼ inch.

Auxiliary damper arm extends 3½ inches from vertical center line. Unbalanced load, 1 pound.

Power Consumption. 12.2 watts opening; 4.2 watts holding; standby, approximately 2 watts.

Available for a.c. only; 115 volts, 50 or 60 cycles.

When ordering, specify size, voltage and frequency, and type of gas (if for propane or butane).

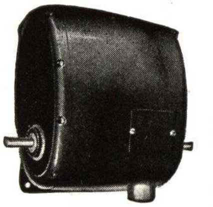
Size.........in.	**¾**	**1**	**1¼**	**1½**	**2**	**2½**
No. **V155**A..ea.	**$28.90**	**28.90**	**32.60**	**38.00**	**41.00**	**49.50**
Capacity.cu. ft.	400	550	850	1100	1550	2250
Ship. Wt....lb.	11½	12	13½	14¾	17¼	23¼

For propane or butane gas in ¾, 1, 1¼, 1½, and 2-inch sizes, add $2.40 extra.

For other available a.c. voltages and frequencies, add $2.40 extra.

Minneapolis-Honeywell Industrial Motors

For Continuous Duty Service



These industrial power units are essentially electric motor-driven speed reducers and are built in a wide range of final shaft speeds. They fulfill a demand for different rates of opening and closing of dampers, valves, and in the operation of other driven mechanisms.

One of the most important requirements of electric motors for operating valves, dampers, etc., is that full torque be available whenever the motor is called on to operate. These power units may also be arranged for manual functioning if desired, although they are primarily designed for use in a system of automatic control of temperature, pressure, etc. Available for 3 general classes of control: 2-position (on and off, high-low); floating; proportioning.

Standard units incorporate single phase, shaded pole squirrel cage, consequently commutatorless, induction motors in both reversing and non-reversing types. These motors are supplied for 115–230 volt, 25–60 cycle a.c.

Specifications

Type	Input in Watts	†Torque in Foot Lb. At 30 Sec. (1 R.P.M.) or Slower — Timing		Shaft Speed or Timing Available in 15 Second Intervals Between Limits Tabulated	
		25 Cycle Squirrel Cage	All Others	60 Cyl. A.C. Squirrel Cage	25 Cyl. A.C. Squirrel Cage
Series 60 Std. 3-Wire Line Voltage—For 2-Position Control—Uni-Directional Power Unit With Maintaining Switch					
*M20–1	35	3	8	15–30	..
M20–2	35	3	8	15–30	..
M20–4	35	3	3	15–30	..
*M21–1	60	6	18	15–30	..
M21–2	60	6	18	15–30	..
M21–4	60	6	18	15–30	..
Series 60 Std. 3-Wire Line Voltage—For Floating Control—Reversing Power Unit With Adjustable Limit Switch					
M60–3	35	3	8	30–60	60
M61–3	60	6	18	30–60	60
Series 90 Potentiometer—For Proportioning Control—Reversing Power Unit With Adjustable Limit Switch					
M92–1	35	3	8	30–60	60
M93–1	60	6	18	30–60	60

*These units provide inherently manual operation facilities.

†On special request, geared motors developing approximately 100, 500 and 1000 foot pounds torque can be furnished.

Minneapolis-Honeywell Time Controllers

Designed primarily to control the operation of attic fans, store lights, or other electrical equipment where current supply is to be turned off at some predetermined interval of time.

Timer may be set to close circuit for any period of time from ½ to 11 hours, by twisting knob on front of timer until desired time interval appears on dial. A twist of the knob in the opposite direction will turn off current supply at any time. A separate manual lever is included which may be used to manually tilt the mercury switch to the "on" position.

Standard switch outlet box mounting. Knockout for wire mould or similar exposed conduit.

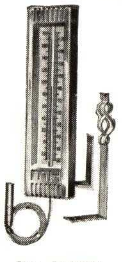
Rating in Amperes

	115V, A.C.	115V, D.C.	230V, A.C.	230V, D.C.
Running Current......	7.4	2.5	5.1	1.3
Locked Rotor..........	44.5	25	30.6	13

Silver bronze finish. Height, 5½ inches; width, 3¼ inches; depth, 3 inches. Shipping weight, 3 pounds.

No. **S403**A, for making Contact for an Adjustable Period....................................each	**$11.20**
No. **S403**B, for Opening Contact for an Adjustable Period....................................each	**11.20**

No. W59 Minneapolis-Honeywell Thermometers



No. W59A

No. W59A. A remote bulb thermometer, equipped with a universal mounting bracket which allows the face of the thermometer to point to the right, left, or straight ahead, and also to point at any angle between vertical and horizontal. This feature combined with the wide red non-freezing liquid column permits temperature reading from a distance of several feet.

Adaptable to wall or duct mounting.

No. W59B, designed for insertion in water pipes or tanks, is similar to No. W59A, except it is equipped with a protecting copper well and it is not furnished with a mounting clip.

Range, −30 to +180°F. only. Element, 5-foot capillary tubing only. Capsule size, 2⅝x11⁄32 inches.

DIMENSIONS: height, 9 inches (scale length, 6½ inches); width, 2 11⁄32 inches; depth, 11⁄16 inches. Depth with adjustable bracket, 3¼ inches. Weight, approximately 4 pounds.

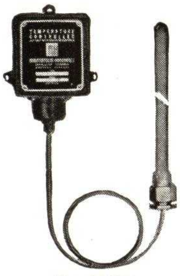
Finish, black Kristo-Krak.

When ordering, specify type number.

No. **W59**A....................................each	**$9.50**
No. **W59**B....................................each	**11.00**

Minneapolis-Honeywell Remote Bulb Thermostats

Mercury Switch Type


No. T415

For use where control element must be mounted in water lines, air streams and other inaccessible mediums. Operating element consists of a vapor filled tubing and bellows. Series 40 or 60 switching action for line or low voltage application. Mercury switch contacts. Five foot element standard; special lengths of 10 feet available at extra cost. Capsule is copper. Temperature adjustment made by screws on top of case.

Dimensions: height from bottom of bellows housing, 7¼ inches (except 15–90° and 140° ranges, 6¼ inches); width, 4¼ inches; depth, depth, 2¾ inches. Weight 3¾ pounds.

When ordering specify type number, range, element length, and special features required.

No.	115 Volts Each	115 Volts Amp.	230 Volts Each	230 Volts Amp.	Switch	Action on Temperature Drop
T415A	**$15.70**	10	**$15.70**	5	S.P.S.T.	Close
T415B	**15.70**	10	**15.70**	5	S.P.S.T.	Open
T615A	**16.90**	1	**16.90**	½	S.P.D.T.	Close, Makes R-B Circuit Open, Makes R-W Circuit
T415F	**16.90**	1	**16.90**	½	2 P.S.T.	Close Two Circuits in Sequence
T415G	**16.90**	1	**16.90**	½	2 P.S.T.	Open Two Circuits in Sequence

No.	Range	Differential Low	Differential High	Bulb Size Inches	Fittings Inches
T415A T415B T615A	0–70°F.	1°	1°	14½x11/16	¾
	*15–90°F.	4–27°	3–13°	14½x11/16	¾
	60–100°F.	1°	1°	14½x11/16	¾
	65–140°F.	4–27°	3–13°	14½x11/16	¾
	†80–210°F.	5–29°	3–14°	4 x½	½
	105–220°F.	5–29°	3–14°	4 x½	½
	*160–270°F.	6–32°	4–15°	4 x½	½
T415F	0–70°F.	1¾° per Stage & 1¾° between Stages for 0–70° Only. Others: 1½° per Stage & 1¼° between Stages		14½x11/16	¾
	*15–90°F.			14½x11/16	¾
	60–100°F.			14½x11/16	¾
	65–140°F.			14½x11/16	¾
	105–220°F.			4 x½	½
T415G	0–70°F.	1½° per Stage & 1¼° between Stages		14½x11/16	¾
	*15–90°F.			14½x11/16	¾
	60–100°F.			14½x11/16	¾

Special features available, at extra cost: Adjustment means—thumb screw; order by No. Q11A. Separable wells—copper, mild steel, stainless steel, and monel. Special mercury tube with ½° differential (except 1½° for 80 to 210° and higher ranges); electrical rating—2 amp. 115 volts 1 amp. 230 volts, 1/12 hp. repulsion-induction, 1/20 hp. single phase and direct current.

*Special ranges available at extra cost.

†Special range available in Nos. T415A and T415B only, at extra cost.

Minneapolis-Honeywell Con-Tac-Tor Mercury Switches

Available for service on many types of switching application where electrical load may vary from one to 45 amperes at 115 volts.

Hermetically sealed and is therefore immune to disturbing influences of smoke, dust, soot, or moisture.

Offers very little resistance to the flow of electric current which makes it very well adapted to the control of low-voltage circuits, usually difficult to "make."

Operates in devices located where surrounding air temperature rises as high as 300°F. or in very moist atmospheres.

Complete information and prices upon application.

Types T915 and L956 Minneapolis-Honeywell Temperature Controllers

Low Voltage A.C. Only

This controller is used in conjunction with Series 90 motors, motorized valves, and relays to obtain modulating control of temperatures in ducts, tanks, etc. Vapor filled bulb, exposed to the temperature under control, is connected to a bellows in the instrument which operates a sliding contact across a potentiometer coil as the temperature changes. This, in turn, causes proportionate changes in motor or valve positions.

Type T915A. Single potentiometer.

Type T915B. Two potentiometers, for simultaneous control of separate circuits.

Type T915C. Single potentiometer, adjustable differential.

Type T915D. Two potentiometers, adjustable differential.

Type T915M. Single potentiometer and set of snap-acting Series 20 contacts, adjustable above or below normal control point.

Types L956A, B, C and D. Same as T915A, B, C, and D, respectively, except furnished in higher temperature ranges only.

Standard element 5 ft. copper. Available in 10, 20 and 30 ft. copper; also 5, 10, 20 ft. mild steel or monel at extra cost.

Copper bulb for ranges up to 240–385°F., monel for higher ranges. Bulb size: ranges 105 to 220°F., and higher 4x½-inch with high temperature fill; lower ranges, 14½x11/16-inch (17½x11/16 inch for 20-foot element) with cross ambient fill.

Potentiometer size: Types T915A, T915B, L956A, L956B, 7/64 inch long, all ranges; Types T915C, T915D: 0-70°F. range, 5/16 inch long, other ranges ¼ inch long; Types L956C, L956D, all ranges, ¼ inch long.

Pressure fittings for ranges 0 to 70°F., 60 to 100°F., 65 to 110°F., ¾-inch pipe size; for higher ranges, ½-inch pipe size.

Range Deg. F.	Types T915A and B Main Scale Setting Degrees F. Low	Mid	High	Types T915C and D Main Scale Setting Degrees F. Low	Mid	High	Type T915M Main Scale Setting Degrees F. Low	Mid	High
0–70	5	3	2	14–73	8–52	7–38	5	3	2
15–90	6	3	2	11–58	7–38	4–28	6	3	2
60–100	4	3	2	7–46	6–39	5–31	4	3	2
65–140	5	3	2	10–57	6–40	4–28	5	3	2
80–210	7	3	2	*12–60	*6–32	*4–22	.	.	.
80–210	.	.	.	†10–58	†6–40	†4–28	.	.	.
105–220	7	3	2	12–60	6–32	4–22	7	3	2
160–280	7	3	2	12–60	6–32	4–22	.	.	.

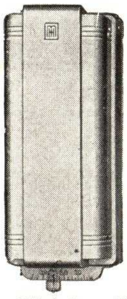
*Type T915C †Type T915D

Range Deg. F.	Types L956A and B Main Scale Setting Degrees F. Low	Mid	High	Types L956C and D Main Scale Setting Degrees F. Low	Mid	High
240–385	8	4	3	15–75	7–40	4–30
370–530	7	5	4	13–82	9–52	6–40
510–700	8	6	5	15–90	12–65	9–54

Equivalent centigrade ranges shown on same scale.

In ordering specify type No., range, and element length

Type H63A Minneapolis-Honeywell Humidity Controllers



A snap acting controller actuated by human hair, the elongation or contraction of which operates a switching mechanism. Provides accuracy and as close control as possible.

Restricted to temperatures less than 100°F. and to non-corrosive atmospheres.

Range, 20 to 96 per cent relative humidity.

Differential 2 per cent relative humidity.

Electrical rating, (running current) 1 ampere, 115 volts; ½ ampere, 230 volts, a.c. only.

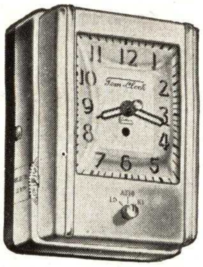
Height, 5 inches; width, 2½ inches; depth, 2 inches. Silver bronze finish.

Weight, 1½ pounds. In ordering, specify type number and special features if required.

Type H63A (Series 60)........................each **$18.10**

Locking cover available at no extra cost.

No. 772 Penn Electric Tem-Clocks



Built-in time-switching mechanism, self-starting Telechron movement. For automatic control of night temperature, when installed in conjunction with Penn Day-Nite Thermostats. Low voltage wiring to Day-Nite Thermostat permits Tem-Clock to be mounted at any location. External selector knob provides for continuous normal day temperature, continuous low temperature or automatic control of lowered night temperature with normal day level.

Switching circuit rated 3 amperes, 24 volts, a.c.

Dull antique silver finish. Shipping weight, 3¼ pounds.

No. **772**, With 115–24-Volt, 60-Cycle, A.C. Transformer.................................each **$20.47**

No. **772**, With 230–24-Volt, 60-Cycle, A.C. Transformer.................................each **22.36**

Penn Heavy Duty Room Thermostats

No. A

A 2-wire, line voltage thermostat for direct control of heating equipment. A sensitive charged power element operates thermostat armature. A strong permanent magnet provides a fast snap action of movable contact on both make and break. Operating temperatures may be raised or lowered by a single outside adjusting lever.

Cover is velvet bronze color, heavy deep drawn brass, with thermometer on outside.

Conduit box for flush mounting regularly supplied. Special conduit box can be furnished for outside exposed conduit.

Electrical rating—d.c., ½ hp.; a.c., 1 hp.; maximum voltage, 250.

Temperature range—60°F. to 80°F. (standard); special ranges on request.

Differential—approximately 2°F., non-adjustable.

Type A, Shipping Weight, Approx. 2½ Pounds..each **$13.80**

No. B

Similar to Type A. Bimetal coil actuates contacts.

Electrical rating—d.c. or a.c., ⅓ hp.: maximum voltage, 250.

Temperature range—55°F. to 85°F. (standard); special ranges on request.

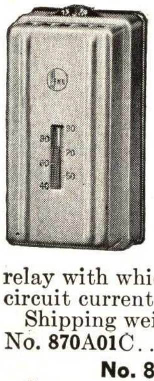
Differential—approximately 2°F., non-adjustable.

Type B, Shipping Weight, Approx. 2¼ Pounds.each **$11.38**

No. 870A01C Penn 2-Wire Thermostats

Maximum Electrical Rating, 2 Amperes, 24 Volts, A.C.

A low-voltage, heat anticipating domestic heating thermostat for warm air, hot water or steam systems, oil, stoker, gas or hand-fired equipment.



Permanent magnet snap-acting contact mechanism. Calibrated adjusting dial at top. Concealed dial lock screw. Recessed thermometer in cover.

Standard temperature range, 55 to 85°F.; special ranges available at extra cost. Differential, ¼ to 3½°F., adjustable.

Mounted on vertical wall surface with bracket and screws provided. Dimensions: 1¾x2x4 inches.

Dull antique silver finish.

In ordering, specify primary control or relay with which thermostat is to be used, and thermostat circuit current in amperes.

Shipping weight, ¾ pounds.

No. **870A01C**.................................each **$10.23**

No. 870A01CN, With Day-Nite Control

Same as No. 870A01C, except with Day-Nite Control.

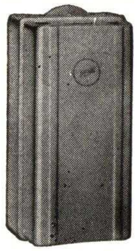
In ordering, give degrees night set back desired. Standard, 9°F., available for 3, 6, 15 or 20°F. when specified.

Shipping weight, ¾ pound.

No. **870A01CN**.................................each **$10.92**

No. 821X01 Penn 3-Wire, 2-Stage Thermostats

Maximum Electrical Rating, 2 Amperes, 24 Volts, A.C.



A non-heat anticipating pilot control for controlling two or more unit heaters; for regulating multiple electric heating elements; for high-low flame burners; and for stoker applications where operation of stoker in sequence with blower or circulator is desired.

Two single-pole, single-throw, snap-acting magnet contact mechanisms, both bimetal elements connecting to a common terminal (circuits are separate when one or both contacts are open). Top adjusting dial regulates operation of both bimetal elements. Dial lock screw.

Temperature range: standard, 55 to 85°F., optional: 35 to 65°F. Special ranges available at extra cost. Differential: first step, 2°F.; second step, 2°F.; between steps, 1 to 3°F. as specified.

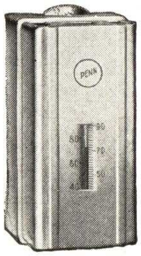
Mounted on vertical wall surface with bracket and screws provided. Dimensions: 1⅝x2x4 inches.

Dull antique silver finish.

In ordering give temperature range required and calibration. Also available with lock-type cover; if desired, specify when ordering. Shipping weight, 1 pound.

No. **821X01**, With Std. or Optional Temp. Range.ea. **$13.80**

No. 835X02 Penn Thermostats



A 3-wire, 2-circuit thermostat for air conditioning service to regulate both heating and cooling equipment with one control.

For low voltage pilot service only. Has only 1 set of contacts closed at any one time.

Also for controlling other 3-wire circuits such as damper motors, motorized valves, etc. When used as a summer cooling and winter heating control, a manual toggle switch must be connected in the control circuit.

Electrical rating—24 volts, maximum current 2 amperes.

Temperature range—55° to 85° F. standard, other ranges on request.

Differential—approximately 2°F., factory set.

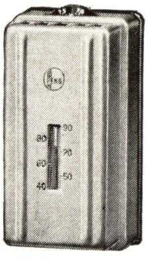
Approximate shipping weight, 1 pound.

No. **835X02**.................................each **$10.23**

No. 872A01 Penn Line Voltage 2-Wire Thermostats

Maximum Voltage, 250 Volts, A.C. or D.C.

A snap-acting heat anticipating thermostat for a.c. load service or d.c. pilot service. For direct control of line voltage a.c. heating equipment within its rating such as unit heaters, circulators, etc.



Permanent magnet snap-acting contact mechanism. Top adjusting dial. Dial lock screw. Supplied with adapter mounting plate to fit standard outlet box.

Standard temperature ranges, 55 to 85°F. or 40 to 80°F.; special ranges available at extra cost. Differential, ½ to 3°F. adjustable.

Mounted on vertical wall surface with bracket and screws provided. Dimensions: 1¾x2x4 inches.

Dull antique silver finish.

In ordering specify number, dependent upon current flow, in amperes, of motor to be controlled, and temperature range.

Shipping weight, ¾ pounds.

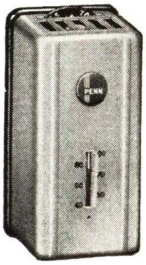
No.	**872A01-H7**	**872A01-H15**	**872A01-H25**	***872A01-H40**
Each	**$10.23**	**10.23**	**10.23**	**10.23**
A.C. Rating..amps.	.5–1	1–2	2–3.5	3.5–5
D.C. Rating..amps.	.1–.5	...	...	...

*Underwriters' Approved for maximum rating as follows: ¼-hp., repulsion-induction; 1/6-hp., single-phase; maximum voltage, 250 a.c.

No. 874A01 Penn Line Voltage 2-Wire Thermostats

1-Hp., 250 Volts, A.C., Maximum
10 Amperes, 115 Volts, A.C., Non-Inductive
7½ Amperes, 230 Volts, A.C.
.5 Ampere to 250 Volts, D.C.

A snap-acting thermostat for heavy duty unit heater installations and control of industrial space heating equipment.



Permanent magnet snap-acting contact mechanism. Calibrated top adjusting dial. Dial lock screw. Supplied with adapter mounting plate to fit standard outlet box. Flush mounting conduit box available on special order.

Standard temperature ranges: 55 to 85°F. or 40 to 80°F.; special ranges available at extra cost. Differential, ½ to 3°F. adjustable.

Mounted on vertical wall surface with bracket and screws provided. Dimensions: $4\frac{25}{32}$x2½x2⅛ inches.

Dull antique silver finish.

In ordering, specify temperature range.

Shipping weight, 1¼ pounds.

No. **874A01**.................................each **$11.44**

Penn Surface Type Controls

No. 420

A 2-wire low or line voltage temperature control. Opens on rising temperature, closes on falling temperature. Used as a safety limit switch, this control shuts down automatic heating equipment in case of excessive boiler temperature. Convenient outside adjusting knob with calibrated scale provides for quick adjustment of control over entire range.

Electrical rating—¾ hp., 115-230 volts, a.c., single phase. Pilot service 1 ampere to 600 volts, a.c.; .5 amperes 125 volts, d.c.; .25 amperes 250 volts, d.c.; and 15 amperes to 250 volts, a.c., non-inductive.

Temperature range—100°F. to 240°F.

Differential—15°F. fixed.

Mounting—either vertically or horizontally on riser pipes to 6 inches in diameter, by means of straps provided.

Approximate shipping weight, 1¾ pounds.

Type **420**..each **$7.70**

No. 421

Same as Type 420, but close on rising temperature; opens on falling temperature. Prevents operation of equipment such as unit heaters when temperature is below point required for adequate heating.

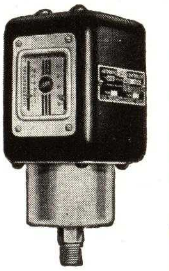
Approximate shipping weight, 1¾ pounds.

Type **421**..each **$7.70**

WHEN ORDERING *please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.*

Penn Steam Pressure Controls

Type 400



A 2-wire low or line voltage steam pressure control which opens on rising pressure; closes on falling pressure. Recommended as a safety limit switch on automatic heating applications to shut down the equipment in case of excessive steam pressure. Also used on steam boiler installations to maintain steam pressures within desired limits.

Calibrated scale shows range and differential setting. Has snap-acting Magnaseal contact structure.

Pressure connection, ¼-inch outside I.P.T.

Electrical rating—¾ hp., 115–230 volts, a.c., single phase. Pilot service, 1 ampere to 600 volts, a.c.; .5 ampere, 125 volts, d.c.; .25 ampere, 250 volts, d.c.

Pressure range—0 to 10 pounds; minimum opening point, 1¼ pounds; maximum opening point, 16 pounds.

Approximate shipping weight, 2¼ pounds.

Type **400**..each **$7.70**

Type 401

Same as Type 400, but closes on rising pressure; opens on falling pressure. Prevents operation of equipment such as unit heaters when pressure is below point required for adequate heating.

Approximate shipping weight, 2¼ pounds.

Type **401**..each **$7.70**

Penn Vapor Controls

No. 410

A 2-wire low or line voltage pressure and vacuum control for vapor or vacuum heating system applications. Opens on rising pressure; closes on falling pressure. Outside range and differential adjustments; calibrated scale shows settings.

Pressure connection, ¼-inch outside I.P.T.

Range—3-inch vacuum to 3 pounds.

Electrical rating— ¾ hp., 115–230 volts, a.c. Pilot service 1 ampere to 600 volts, a.c.; .5 ampere 115 volts, d.c.; .25 ampere, 230 volts, d.c.

Differential—adjustable from ¼ to 1 pound.

Approximate shipping weight, 4 pounds.

No. **410**..each **$13.97**

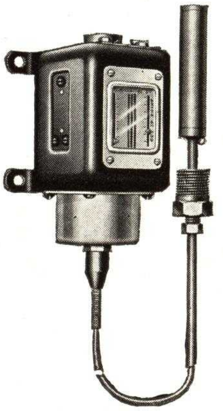
No. 411

Same as Type 410, but arranged to close on rising pressure; open on falling pressure. Recommended for unit heater installations to prevent fan operation when vapor pressure is insufficient for heating.

Approximate shipping weight, 4 pounds.

No. **411**..each **$13.97**

No. 430 Style 4 Penn DeLuxe Immersion Temperature Controls



Style No. 4

A two-wire control for remote mounting, opens on rising, closes on falling temperature. Used as a safety limit or an operating control. Visible calibrated scale.

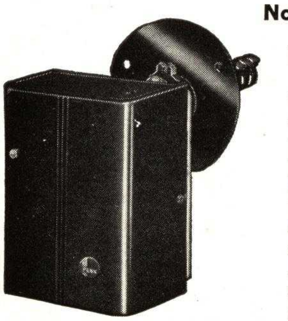
Standard temperature range—140°F. to 200°F. Differential—8°F. to 20°F. (adjustable). Regularly supplied with 4 foot capillary tube (2, 6 or 8 foot supplied on special order at no extra cost.) Maximum electrical rating—¾ hp., 115–230 v., a.c., 1 phase; 15 amps. to 230 v., a.c., non-ind.; pilot, 1 amp. to 600 v., a.c.; .5 amp., 115 v., d.c.; .25 amp., 230 v., d.c.

Shipping weight, 3½ pounds.

No. **430**...............each **$12.88**

Penn Stack Switches

No. 672



For intermittent ignition oil burners.

Low voltage (24-volt) 2-wire thermostat circuit. Incorporates voltage protection feature which shuts down burner operation before voltage on supply line drops to point where ignition may become spotty or fail; automatically restarting burner on return to normal line voltage. Also provides complete safety shutdown in the event of ignition, flame, or power failure or failure of the control system. Recycles in the event of power failure. Hand reset push button for restarting burner following shut-down because of flame or ignition failure. Ignition circuit opens automatically after flame has been established.

Electrical rating—thermostat circuit, 24 volts; relay, 1 hp. maximum. Shipping weight, 6 pounds.

For **115** Volts, 50–60 Cycles, A.C.	each	**$28.34**
For **230** Volts, 50–60 Cycles, A.C.	each	**30.87**

No. 670

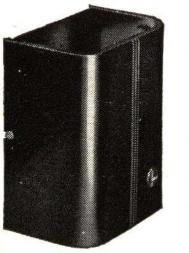
Identical in appearance and operation with the No. 672, except for use on continuous ignition burners.

For **115** Volts, 50–60 Cycles, A.C.	each	**$24.49**
For **230** Volts, 50–60 Cycles, A.C.	each	**27.02**

No. 562 Penn Timed Interval Combustion Controls

1 Hp., Maximum, 1-Phase, 115 Volts, 60 Cycles, A.C.
Thermostat Circuit: 2-Wire, 24 Volts, .4 Amperes

A stoker timer relay for domestic and commercial warm air, hot water or steam systems up to 1-hp. maximum.



Can be used with No. 870A01C-A4 thermostat.

Adjustable firing frequency: standard "on" periods 1 to 10 minutes, every 30 or 60 minutes. Periods easily adjustable to suit all types of fuel and for all heating plants.

Built-in transformer for supplying low voltage current to thermostat.

In ordering, specify voltage and cycles, and length and frequency of firing period.

Also available with 4-hour motor for firing periods every 2 or 4 hours. Duration of "on" periods, 1 to 40 minutes.

Shipping weight, 3¾ pounds.

No. **562**, 115 Volts, 60 Cycles	each	**$19.32**
No. **562**, 115 Volts, 50 Cycles	each	**21.85**
No. **562**, 115 Volts, 25 Cycles	each	**23.11**
No. **562**, 230 Volts, 60 Cycles	each	**21.85**
No. **562**, 230 Volts, 50 Cycles	each	**23.11**

No. 842 Penn Humidistats

A sensitive, 3-wire humidistat. Designed to control relative humidity on summer or winter air conditioning systems. Also for industrial humidifying or dehumidifying applications. One pair of contacts closes at high humidity; one pair at low humidity.

Human hair element provides close humidity regulation, operating on a differential of approximately 4 per cent. Range is 30 to 70 per cent or 10 to 100 per cent relative humidity; fully adjustable by means of convenient outside adjusting dial.

Has snap-acting magnet contact structure.

Electrical rating—a.c. pilot service only, 2.5 amperes, 25 volts; 1 ampere, 115 volts; .5 ampere, 230 volts.

Conduit box and flush mounting bracket.

In ordering, specify humidity range.

Shipping weight, 1¼ pounds.

No. **842** . . . . each **$18.97**

No. 440AT01 Penn Bimetal Immersion Controls

For unit heater or circulator control applications (to close circuit on temperature rise). For all temperature control applications requiring a direct mounting instrument for liquid immersion. For 2-wire low or line voltage service.

Enclosed Magneseal contact unit. Mounted vertically or horizontally. Range—50° to 350°F. Differential—14°F. (non-adjustable) at 1°F. per minute rate of change.

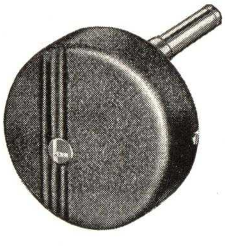
Electrical rating—¾ hp., single phase, 115–230 volts, a.c.; 15 amperes, 110–220 volts, a.c., non-inductive; pilot service, 1 ampere to 600 volts, a.c., .5 amperes, 115 volts, d.c.; .25 amperes, 230 volts, d.c.

No. **440AT01**, Ship. Wt. 1½ Lb. . . . . each **$8.39**

Penn Immersion Controls

Load Rating: ¾ Hp., 115 to 230 Volts. A.C., 1-Phase
Pilot Rating: 1 Ampere to 600 Volts, A.C.
.5 Ampere, 125 Volts, D.C.
.25 Ampere, 250 Volts, D.C.
15 Amperes to 250 Volts, A.C., Non-Inductive

A safety limit or operating control for hot water heating systems. Opens on rising temperature.



Single-pole contact structure. Spirally wound bimetal helix, housed inside the immersion well. Provides wide temperature range for all space heating applications.

Range adjusting pointer and calibrated dial. Magneseal contact unit easily replaced in the event of contact damage due to abnormal load conditions.

Temperature range, 50 to 350°F.

Differential, 14°F., non-adjustable.

No.	**440AT02**	**440AT12**
Each	**$8.39**	**8.39**
Size Bulb . . . inches	⅝x3	13/16x1¾
Connector I.P.T . . . inches	½	¾
Shipping Weight . . . pounds	1½	1¾

No. 512ATO2 Penn Warm Air Limit Controls

A 2-wire line voltage control, opens high, closes low. For use as a safety limit switch to automatically shut down heating plant when bonnet temperature reaches an unnecessarily high point.

Incorporates completely enclosed snap-acting Magneseal contact structure, easily replaced in the field as a unit in the event of contact damage due to abnormal load conditions.

Range setting is easily made with convenient adjusting pointer and calibrated scale. Skeleton guard protects helix from mechanical injury.

Temperature range—150°F. to 450°F., adjustable; differential, 30°F. to 80°F., adjustable.

Electrical rating—¾ hp., 115–230 volts, a.c., 1 phase; pilot, 1 ampere to 600 volts, a.c.; 15 amperes to 250 volts a.c., non-inductive; .5 ampere 115 volts, d.c.; .25 ampere 230 volts, d.c.

Shipping weight, 3¼ pounds.

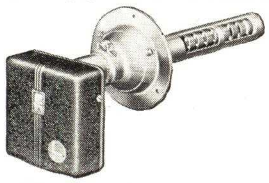
No. **512ATO2** . . . . each **$7.70**

No. 511AT01D Penn 2-Wire Single-Pole Furnace Fan Controls

Load Rating: ¾ Hp., 115 to 230 Volts, A.C., 1-Phase
Pilot Rating: 1 Ampere to 600 Volts, A.C.
.5 Ampere, 125 Volts, D.C.
.25 Ampere, 250 Volts, D.C.
15 Amperes to 250 Volts, A.C., Non-Inductive

This control closes on rising temperature and is for oil, stoker, gas or hand-fired equipment. Can also be installed as a relief fan switch for stoker-fired furnace systems.

Helix temperature indicated by calibrated scale and pointer, visible through non-breakable window cover. Skeleton guard protects helix from mechanical injury. Convenient adjusting pointers and calibrated dial.



Magneseal contact unit easily replaced in the event of contact damage due to abnormal load conditions.

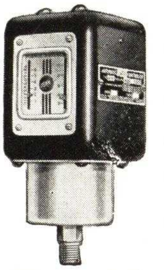
This control is also available with summer-winter control knob, when specified, at no extra cost. Provides for summer fan operation, manually controlled. When ordered, specify No. 511AT11D.

Temperature range, 75 to 325°F., adjustable. Differential, 18 to 75°F., adjustable.

Shipping weight, 3½ pounds.

No. **511AT01D**....................................each **$8.33**

No. 401 Penn Steam Pressure Unit Heater Controls



A 2-wire steam pressure control designed to prevent operation of unit heater fan when steam pressure is below point required for adequate heating. Closes on rising pressure; opens on falling pressure. Outside range and differential adjustments; calibrated scale shows settings.

Electrical rating—¾-h.p., 110-220-volts, a.c. single-phase. Pilot service, 1 ampere to 600 volts, a.c.; .5 ampere, 115 volts, d.c.; .25 ampere, 230 volts, d.c.

Pressure range—0 to 10 pounds (standard); special ranges on request at extra cost.

Differential—adjustable from 1¼ to 6 pounds.

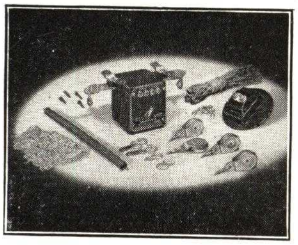
Mounting—standard ¼-inch I.P.T. male connector. Can also be furnished with ¼-inch S.A.E. tubing connector.

No. **401**, Approx. Shipping Weight, 3 Pounds....each **$7.70**

No. 913 Penn Damper Motors

Ball Bearing

115 Volts, 60 Cycles, A.C.
Thermostat Circuit 2-Wire, Low Voltage, 24 Volts, 1 Ampere



For domestic heating service on hand-fired warm air, hot water or steam systems. Can be used with No. 870A01C-A10 thermostat.

Positive straight-line principle of operation, the rack is driven by the motor from right to left when thermostat is closed. When circuit is open, as when the thermostat is satisfied, or in case of power failure, an external spring returns the rack to checked position. This is a safety factor and prevents danger of uncontrolled fire.

Furnished with approximately 18 feet of furnace chain, 4 ball-bearing pulleys, 4 hooks, 25 feet of insulated thermostat wire, insulated staples, return spring and step-down transformer.

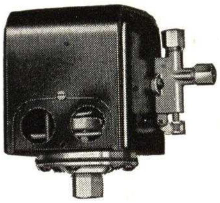
Approximate shipping weight, 5¾ pounds.

No. **913**....................................each **$16.90**

Penn Automatic Controls

2-Pole—Double Break

Designed for automatic motor control of air compressors, water systems and other pressure equipment. The 2-pole, double break contacts open on rising pressure and close on falling pressure.



Contacts are of finest electrolytic silver, actuated by means of V-over-roller trip mechanism.

Plainly marked inside adjusting screws provide for both range and differential settings.

No. 114B01, is standard type, without pressure release valve.

No. 114B02, is supplied with 2-way pressure release valve for air compressor service. Designed for systems equipped with auxiliary tank or bleeding chamber to relieve motor of heavy starting load.

Standard connector, ¼-inch female I.P.T.; ⅛ or ⅜-inch I.P.T. on special order.

Approximate shipping weight, 3½ pounds.

Electrical Ratings

SINGLE-PHASE, A.C.—1 hp. 115 volts; 2 hp., 230 volts; 1 hp., 440 to 550 volts.

POLYPHASE, A.C.—2 hp., 115 volts; 3 hp., 230 volts; 1 hp., 440 to 550 volts.

D.C.—¼ Hp., 32 volts; ½ hp., 115 volts; ½ hp., 230 volts; pilot, 440 to 550 volts.

Specifications

Pressure Range.pounds	20–200	10–150	5–85	5–55	3–30
No. **114B01**......each	**$6.44**	**$6.44**	**$6.44**	**$8.33**	**$8.33**
No. **114B02**......each	**8.74**	**8.74**	**8.74**	....	....
Pressure Differential.lb.	24–58	18–43	12–25	8–17	4–9

When ordering, specify number, pressure range, and pressure connection, if other than standard.

No. 791BE01LU Penn Relays and Transformers

A 2-pole, single-throw, double-break switch, combining a low voltage pilot relay and step-down transformer.

When pilot switch closes the 24-volt pilot circuit, the relay is energized, closing main or line contacts.

When Temtrol is used as the pilot control, specify A4 designation.

Electrical rating: load circuit, 1 hp., maximum; 10 amperes, non-inductive; pilot circuit, 24 volts.

No. **791BE01LU**, For 110–24-Volts, 60 Cycles...each **$10.23**
No. **791BE01LU**, For 220–24-Volts, 60 Cycles...each **12.76**

No. 793 Penn Universal Relay-Transformers

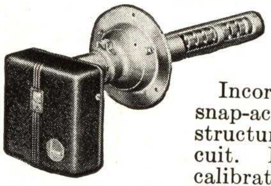
Combines a step-down transformer and low-voltage pilot relay which operates two separate contact structures. One contact structure is a single-pole, single-throw, double-break line voltage switch for handling hot water circulators, etc. The other contact structure (single pole, single throw) is for closing and opening pilot circuit of primary control simultaneously with starting and stopping of circulator or blower. When Penn auxiliary heat-actuated thermostat is used as pilot-control, specify thermostat designation A4.

Electrical rating—thermostat circuit, 24 volts, .4 amperes; relay, 1 hp., maximum; 10 amperes, a.c., non-inductive.

Shipping weight, 3¼ pounds.

No. **793**, For 115–24-Volts, 60 Cycles, A.C......aech **$11.44**
No. **793**, For 230–24-Volts, 60 Cycles, A.C......each **13.97**

No. 515X01 Penn DeLuxe Combined Fan and Limit Switches



Combines the functions of 2-wire furnace fan control and 2-wire safety limit control.

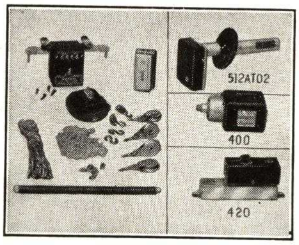
Incorporates two completely enclosed snap-acting Magneseal structures. Each structure makes and breaks its own circuit. Helix temperature indicated by calibrated scale and pointer; visible through dustproof, non-breakable window in control cover. Fan and limit settings are easily made.

Fan range—75° to 325°F. (adjustable). Fan differential—18° to 75°F. (adjustable). Limit range:—100° to 350°F., adjustable. Limit differential—18°F. to 75°F., adjustable. Electrical rating—¾ hp., 115–230 volts, a.c., 1 phase; pilot service, 1 amp. to 600 volts, a.c.; .5 amp. 115 volts, d.c.; .25 amp. 230 volts, d.c.

No. **515X01**, Shipping Weight, 3½ Pounds......each **$13.57**

Penn Damper Motor Packaged Sets

115 Volts, 60 Cycles, A.C.



Set includes approximately 18 feet of furnace chain, 4 ball-bearing pulleys, 4 hooks, 25 feet of insulated double thermostat wire, insulated staples, return spring and step-down transformer.

No. DM-2. For gravity warm air systems. Consists of No. 870A01C-A10 thermostat, No. 512AT02 warm air limit control and No. 913 damper motor. Approximate shipping weight, 12½ pounds.

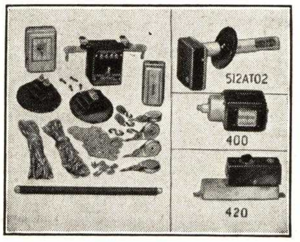
No. DM-3. For steam systems. Consists of No. 870A01C-A10 thermostat, No. 400 steam limit control and No. 913 damper motor. Approx. shipping weight, 11½ lbs.

No. DM-4. For gravity hot water systems. Consists of No. 870A01C-A10 thermostat, No. 420 hot water limit control and No. 913 damper motor. Approximate shipping weight, 9¾ pounds.

No..............................	DM-2	DM-3	DM-4
Each..............................	**$34.84**	**34.84**	**34.84**

Penn Day-Nite Damper Motor Packaged Sets

115 Volts, 60 Cycles, A.C.



All sets include approximately 18 feet of furnace chain, 4 ball bearing pulleys, 4 hooks, 50 feet of insulated double thermostat wire, insulated staples, return spring and step-down transformer.

No. DM-2A

For gravity warm air systems.

Set consists of No. 870A01 CN-A10 Day-Nite thermostat, No. 772 Tem-Clock and transformer, No. 512AT02 limit control and No. 913 damper motor.

No. DM-2A, Approx. Shipping Weight, 15 1/16 Lb.each **$56.00**

No. DM-3A

For steam systems.

Set consists of No. 870A01CN-A10 Day-Nite thermostat, No. 772 Tem-Clock and transformer, No. 400 limit control and No. 913 damper motor.

No. DM-3A, Approx. Shipping Weight, 14 Lb...each **$56.00**

No. DM-4A

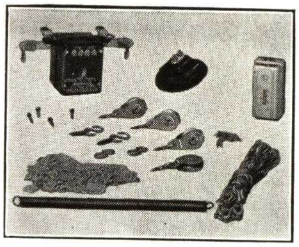
For gravity hot water systems.

Set consists of No. 870A01CN-A10 Day-Nite thermostat, No. 772 Tem-Clock and transformer, No. 420 limit control and 913 damper motor

No. DM-4A, Approx. Shipping Weight, 13⅜ Lb.each **$56.00**

No. DM-1 Penn Damper Motor Packaged Sets

115 Volts, 60 Cycles, A.C.



For any type heating system.

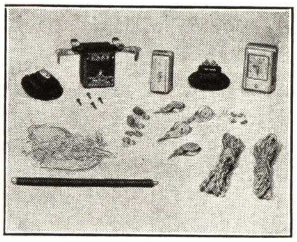
Set consists of No. 870A01C-A10 thermostat, No. 913 damper motor, approximately 18 feet of furnace chain, 4 ball-bearing pulleys, 4 hooks, 25 feet of insulated double thermostat wire, insulated staples, return spring and step-down transformer.

Approximate shipping weight, 7 pounds.

No. DM-1..each **$27.14**

No. DM-1A Penn Day-Nite Damper Motor Packaged Sets

115 Volts, 60 Cycles, A.C.



For any type heating system.

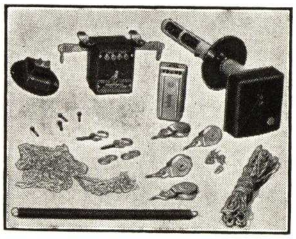
Set includes No. 870A01CN-A10 Day-Nite thermostat, No. 772, Tem-Clock and transformer, No. 913 damper motor, approximately 18 feet of furnace chain, 4 ball bearing pulleys, 4 hooks, 50 feet of insulated double thermostat wire, insulated staples, return spring and step-down transformer.

Approximate shipping weight, 12 pounds.

No. DM-1A.....................................each **$48.30**

No. DM-5 Penn Damper Motor Packaged Sets

115 Volts, 60 Cycles, A.C.



For forced warm air systems.

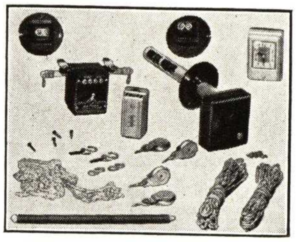
Set consists of No. 870A01C-A10 thermostat, No. 515X01 fan and limit control, No. 913 damper motor, approximately 18 feet of furnace chain, 4 ball bearing pulleys, 4 hooks, 25 feet of insulated double thermostat wire, insulated staples, return spring and step-down transformer.

Approximate shipping weight, 12¾ pounds.

No. DM-5.......................................each **$40.71**

No. DM-5A Penn Day-Nite Damper Motor Packaged Sets

115-Volts, 60 Cycles, A.C.



For forced warm air systems.

Consist of No. 870A01CN-A10 Day-Nite thermostat, No. 772 Tem-Clock and transformer, No. 515X01 fan and limit control, No 913 damper motor, approximately 18 feet of furnace chain, 4 ball bearing pulleys, 4 hooks, 50 feet of insulated double thermostat wire, insulated staples, return spring and step-down transformer.

Approximate shipping weight, 15 5/16 pounds.

No. DM-5A.......................................each **$61.87**

Model XS McDonald Automatic Oil Burners

With Floor Mounting

With Flange Mounting

An automatic oil burner for home installation.

Uses 3, 2 or 1 grade fuel oil. Designed for either floor mounting on 3-point adjustable pedestal or flange mounting on a front boiler plate. Direct pump drive with pump speed of 1725 rpm, blower of rust-proof pressed steel, convenient and accurate air control, Nu-Way or optional control system, removable burner assembly.

Has a rugged split phase type of motor, speed 1725 rpm., with constant or intermittent ignition. Ignition transformer develops 10,000-volt electric arc and is designed to eliminate radio interference; all conductors entirely shielded. Stainless steel electrodes will not foul or burn. Window permits observation of nozzle and electrodes.

Diameter of draft tube, 4 inches, length 8½ inches standard or 15½ inches optional. Nozzle and air deflector of high temperature metal.

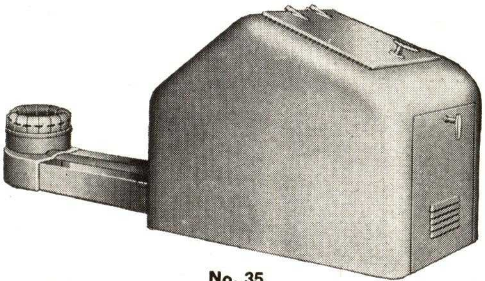
Oven-baked blue enamel wrinkle finish.

Model		XS-2	XS-4
Fuel Burning Capacity	gallons per hour	1 to 2	2 to 4
Capacity, Direct Steam Radiation	square feet	600	1200
Capacity, Direct Water Radiation	square feet	960	1920
Motor	horsepower	⅛	⅙
Watt Demand		70 to 90	120 to 150
Approximate Shipping Weight	pounds	120	130

McDonald Coal Stokers

Commercial and Domestic—For Bituminous Coal

For Installation with Warm Air Furnaces, Steam, Vapor, or Hot Water Boilers



No. 35

Gives steady, reliable, evenly controlled heat, regardless of weather, requiring only one tending daily.

Automatic controls. Thermostat controls operation according to temperature desired. Has limit control and timer relay or pilot control, which automatically starts stoker at predetermined intervals and prevents fire going out during warm periods, or when thermostat is not calling for heat.

Under-feed method of firing produces maximum amount of heat from the fuel. Coal is fed from hopper into retort by a worm with regular movements. As coal approaches fire zone, it is preheated. Gases formed are forced to pass upward through an incandescent bed of coal to burn. Fixed carbon in the coal continues to rise through the fire and is burned as coke.

New type of port construction aids in forming ideal fire-bed and assures greater fuel efficiency. Fins attached to burner top not only cool and protect top ring, but also preheat incoming air to furnish better combustion. Ports are arranged high enough in tuyere so that ignited fuel is properly deposited on the fire-bed.

Variable speed transmission; permits ample adjustments of coal feed.

Air adjustments can be set so that exactly the proper amount of air is supplied for maximum efficiency. All working parts run in an oil bath.

Speeds easily changed with shift lever. Extra large feed screws operate very slowly. Flights are accurate.

G-E motor of ample load carries size safely and easily.

Supplied with one clinker tong as regular equipment. Controls furnished as extra equipment.

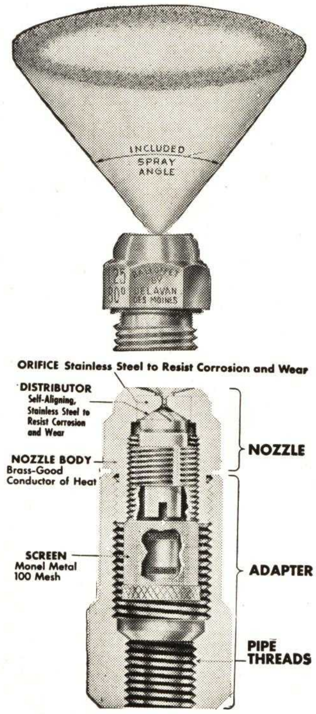
No.	Hopper Capacity Pounds	Coal Feed Lb. Per Hour		Boiler Hp.	Steam Radiation Sq. Ft.	Hot Water Radiation Sq. Ft.	Warm Pipe Area Sq. In.	Ship. Weight Pounds
		Minimum	Maximum					
*20	Closed 350	10	20	5	500	800	900	429
*35	Closed 350	7	35	8	800	1280	1440	490
50	Closed 500	10	50	12	1200	1920	2160	600
65	Open 500	17	65	13.5	1500	2400	....	753
†75	Open 1000	15	75	18	1800	2880	....	848
†100	Open 1000	20	100	25	2500	4000	....	881
†150	Open 1000	30	150	39	3900	6240	....	888
250	Open 1000	85	250	62	6250	10000	....	1910
350	Open 1000	112	350	86	8650	14000	....	2250

*DeLuxe Model having fully enclosed motor, transmission and blower.

†Furnished with 1000-pound open hopper unless otherwise specified.

Delavan Oil Burner Nozzles

For High Pressure Gun-Type Oil Burners
Balloffet Design
Type DBA, Hollow Cone Spray Tips
Type DBB, Full Cone Spray Tips


INCLUDED SPRAY ANGLE
DELAVAN DES MOINES
ORIFICE Stainless Steel to Resist Corrosion and Wear
DISTRIBUTOR Self-Aligning, Stainless Steel to Resist Corrosion and Wear
NOZZLE BODY Brass-Good Conductor of Heat
SCREEN Monel Metal 100 Mesh
NOZZLE
ADAPTER
PIPE THREADS

Hollow Cone Spray
Cross Section of Complete Nozzle, Including Tip Strainer, and Standard Adapter

Nozzle produces finely atomized, uniform, well-balanced spray with a wide range of domestic fuel oils.

The orifice disc and distributor are made of stainless steel for greatest resistance to wear and corrosion. The orifice disc is pressed into the brass nozzle body and is not removable. Brass is used for the nozzle body, screw pin, strainer body, and adapter.

Has standard threads and is interchangeable with other nozzle tips.

Standard Angles of Spray: 60°, 70°, 80°, and 90° are standard in all sizes listed; 45° is standard in sizes 1.00 through 8.00 gph.; 30° is standard in sizes 1.00 through 4.00 gph.

Standard Ratings—Gallons per Hour:

.50
.65
.75
.85
1.00
1.10
1.25
1.35
1.50
1.65
1.75
2.00
2.25
2.50
2.75
3.00
3.50
4.00
4.50
5.00
5.50
6.00
7.00
8.00
9.00
10.00
11.00
12.00
13.00
14.00
15.00
16.00
17.00
18.00
20.00
22.00
24.00
26.00
28.00
30.00
32.00
35.00
.....
.....

Dimensions: Diameter across hex. faces, ⅝ inch. Thread, 9/16-24 N.F. (S.A.E.). Length, adapter seat to tip, .781 inch.

Type DBA is most commonly used and will be furnished unless Type DBB is specified.

Individually packaged.

Type..................................		DBA	DBB
.50 GPH. and **.65** GPH	..........each	**$2.00**	**$2.00**
.75 GPH, and **.85** GPH	..........each	**1.75**	**1.75**
1.00 GPH. to **35.00** GPH	..........each	**1.50**	**1.50**

For other than standard capacities and angles, add 30 per cent.

Nozzle Accessories

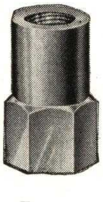
Strainers

Has brass body and monel screen.

Standard strainer is used with standard or Century type adapter; long strainer, with long adapter; and button strainer, with short adapter.

Standard, **100** Mesh, ⅝ Inch Long	.....each	**$.28**
Standard, **120** Mesh, ⅝ Inch Long	.....each	**.30**
Standard, **200** Mesh, ⅝ Inch Long	...............each	**.33**
Button, **100** Mesh, 3/16 Inch Long	...............each	**.30**
Long, **100** Mesh, 15/32 Inches Long	...............each	**.43**
Small Line, **100** Mesh, 2½ Inches Long	.........each	**1.15**

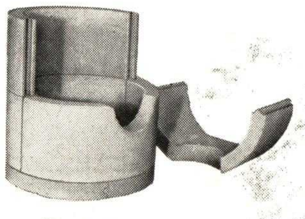
Adapters



Always used as a coupling between the nozzle tip and the oil delivery pipe. Made of brass.

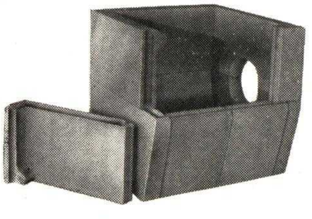
Standard, ⅛ or ¼ Inch F.P.T., 1⅜ Inches Long	...................each	**$.33**
Short, ⅛ or ¼ Inch F.P.T., 15/16 Inches Long	...................each	**.35**
Long, ⅛ or ¼ Inch F.P.T., 2 Inches Long	...................each	**.60**
Century, ⅜ Inch M.P.T., 1⅜ Inches Long	...................each	**.35**
Double, ¼ Inch F.P.T., 1⅜ Inches Long	........each	**2.50**
Triple, ¼ Inch F.P.T., 1⅜ Inches Long	........each	**3.25**

Petco Interlocking Combustion Chambers



Vertical

Baffle



Rectangular

Pre-cast interlocking combustion chambers will fit any boiler or furnace. Highly efficient insulating material is used throughout in the manufacture of these easy-to-install interlocking (joint) chambers.

Vertical—Round

No.	Rating GPH.	Dimensions, Inches: Outside Diam.	Inside Diam.	Overall Height	Inside Depth	Air Tube Open. In.	Ht. to Ctr. Line Air Tube Open, In.	Approx. Ship. Wt. Lb.
1B	1.00–1.20	13¾	11	14½	13	5	8	70
1A	1.35–1.50	15	12¼	14½	13	5	8	80
1	1.65	17	14¼	14½	13	5	8	100
3	2.00	17	14¼	16	14½	5	8 or 9½	110
5	2.50	20	17¼	14½	13	5	8	150
7	3.00	20	17¼	16	14½	5	8 or 9½	170

Rectangular

No.	Rating GPH.	Dimensions, Inches: Outside	Inside	Overall Height	Inside Depth	Air Tube Open. In.	Ht. to Ctr. Line Air Tube Open, In.	Approx. Ship. Wt. Lb.
11	1.00–1.20	13x13	10x10	14	12¼	5	6¾	85
13	1.35–1.50	15x15	12x12	15	13¼	5	7¾	105
15	1.65–2.00	17x17	14x14	16	14¼	5	8¾	130
17	3.00	19x19	16x16	17	15¼	5	8¾	180

Baffles

Size. In.	Description	Approx. Ship. Wt., Lb.
11	For Nos. 1B, 1A, 11, and 13 Chambers..........	25
13	For Nos. 1, 3, and 15 Chambers................	30
15	For Nos. 5 and 7 Chambers.....................	40

No. 908 McDonald Open Type Vents

With Double Outlet

McDONALD
DUBUQUE

Made of high grade grey iron. Full venting area. Vent openings protected by screens.

Size	.........................inches	1	1¼	1½	2
Weight	.......................pounds	⅞	2¼	2¼	3¼
No. **908**	.........................each	**$.60**	**.85**	**.85**	**1.23**

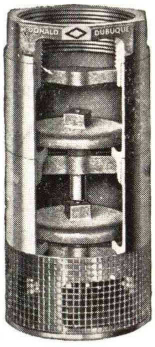
McDonald Double Tapped Bushings

Plate 881

We carry a complete stock of Double Tapped Bushings for use in making connections at underground storage tanks.

Size Inches	Each	Size Inches	Each
2 x1	**$.44**	**3 x2**	**$.55**
2 x1¼	**.44**	**3½x1½**	**.55**
2 x1½	**.44**	**3½x2**	**.55**
2½x1½	**.57**	**4 x1½**	**.99**
2½x2	**.57**	**4 x2**	**.99**
3 x1½	**.55**	....	....

McDonald All Bronze Foot Valves



No. 913

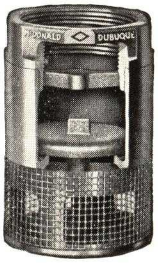
Seats and discs carefully machined.

No. 913 Double Poppet

Size in.	1¼	1½	2
Each...	**$4.91**	**6.31**	**8.80**
Wt....lb.	3¼	3½	4¾

No. 918 Single Poppet

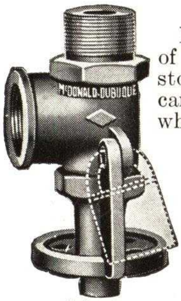
Size...in.	1¼	1½	2
Each....	**$3.52**	**3.96**	**6.07**
Wt....lb.	2½	2½	3¼



No. 918

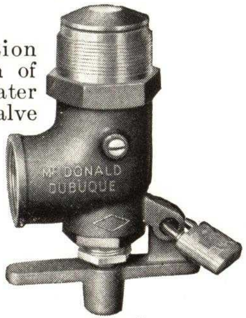
No. 885 McDonald Anti-Freeze Drain Valves

All Bronze



1-Inch

Drains accumulation of water at bottom of storage tanks. Water cannot remain in valve when closed. Valve is absolutely tight. After removing padlock, wheel or handle is reversed and serves as key for opening or closing.



2-Inch

Size....inches	1	2
No. 885....each	**$4.37**	**11.94**
Approximate Weight....pounds	1½	6

No. 882 McDonald Vented Fill Caps

Cast Iron

The McDonald Vented Fill Caps are of the hinged cover type. These caps may be locked to prevent theft of the contents of tanks.

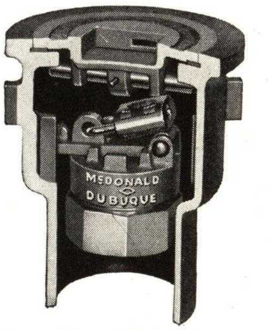
Size....inches	2	2½	3	4
No. 882....each	**$.70**	**.89**	**1.11**	**2.37**
Weight....pounds	1¾	3⅝	5	6½

MANUFACTURERS' CATALOGS

We shall be glad to send MANUFACTURERS' CATALOGS and OTHER AVAILABLE PUBLICATIONS AND DATA on request.

No. 969 McDonald Flush Fill Boxes

Settle-Proof Lock Type



Eliminates strain on underground connections which may be caused by settling of the tank. This type of settle-proof fill box is especially desirable where the underground tank is buried under the concrete.

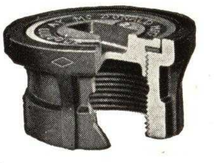
It is a combination of a cast iron manhole with bronze quick opening cover, and an inner all bronze lock type screw fill cap. The fill cap is screwed to the fill pipe, and being separate from the iron manhole all strain on connections is eliminated in case of settling.

When the bronze inner cap is locked in position, ribs on the inside of the iron manhole prevent the cap being tampered with by unauthorized persons.

A malleable iron wrench is furnished for use in removing manhole cover and also bronze inner cap.

Size....inches	2	2½	3
Weight....pounds	11½	15½	18

No. 904 McDonald Plain Flush Fill Boxes



Cast iron body, bronze cap, water tight.

Wrench furnished with box.

Size....inches	2	2½	3
Each....	**$1.54**	**2.31**	**3.30**
Weight....pounds	2½	3¼	4¾

No. 905 McDonald Lock Fill Caps

Water-Tite—Air-Tite

McDONALD DUBUQUE

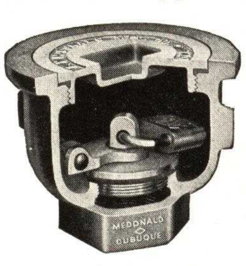
Furnished with bronze body and iron screw cover.

Cover may be easily locked to body, regardless of position of cap.

Furnished with setscrew in body which may be tightened and then chipped off to prevent cap being removed from fill pipe.

Size....inches	2	2½	3	4
No. 905....each	**$1.69**	**1.93**	**2.15**	**3.25**
Weight....pounds	2	3	4½	7

No. 928 McDonald Lock Type Flush Fill Boxes



Lock cap easily accessible, absolutely water tight. Can be furnished with drain hole when specified. Wrench furnished with box.

Size....inches	2	2½	3
Each....	**$4.87**	**6.17**	**7.71**
Weight....pounds	10	11½	15¼

McDonald Horizontal Fuel Oil and Underground Tanks

Black Steel Fuel Oil Tanks

For oil burners and gasoline storage.

Standard with four threaded openings or flanges. No allowance made if less than four openings are required. Additional openings, 4 inches or smaller are extra.

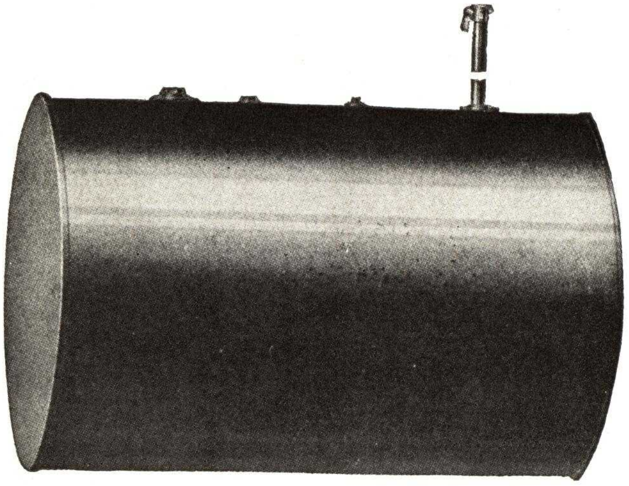
Underground fittings are not standard equipment but are available.

Tappings

Tanks less than 1,000 gallon capacity tapped: one 2-inch, one 1-inch, one 1½ inch, and one 3½-inch in line on top shell; one 1½-inch in head.

Tanks 1,000 gallons or larger tapped: one 3-inch, two 1½-inch, one 3½-inch in line on top shell; one 1½-inch in head.

Painted, black asphaltum.



Galvanized Underground Tanks

With Underwriters' Label

A galvanized welded tank bearing the Underwriters' label.

Underground fittings are not standard equipment but are available

Tappings

Tanks 280 and 500 gallon capacity tapped: one 3½-inch and one 1-inch opening near one end; one 3-inch and one 1½-inch opening near opposite end.

Tank of 1,000 gallon capacity tapped: one 3-inch and one 1-inch opening on one end; one 3½-inch and one 1½-inch opening on opposite end.

Black Steel Fuel Oil Tanks

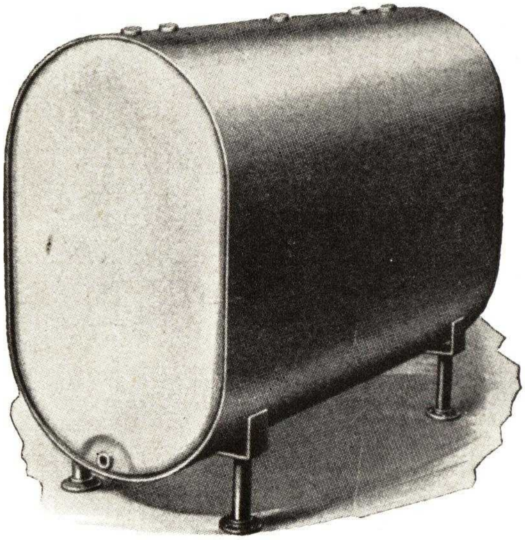
Capacity....gallons	**200**	**250**	**300**	**400**	**560**	**600**	**600**	**1000**	**1500**	**2000**	**2500**	**3000***	**3000***	**4000**
Diameter....inches	36	36	36	36	48	42	36	48	64	64	64	72	72	84
Length....feet	4	5	6	8	6	8⅓	12	11	9	12	15	14	14	14
Gage No. or Size....inches	14	14	14	14	14	14	14	12	12	10	10	10	3/16"	3/16"
Shipping Weight....pounds	170	205	230	290	330	355	415	735	880	1410	1700	1850	2580	2960

Galvanized Underground Tanks

Capacity....gallons	**280**	**550**	**1000**
Diameter....inches	42	42	45½
Length....inches	47	94	144
Gage No.	14	14	12
Shipping Weight....pounds	230	385	790

*Underwriters' approved.

McDonald Obround Vertical Basement Fuel Oil Tanks



Tappings: One 2-inch and one 1-inch near one end; two 1½-inch on opposite end; all in line on top of shell. One 1-inch tapping in lower section of head on same end as 1½-inch tapping.

Pipe base not regularly included. Pipe legs, 1½ inches in diameter and 12 inches long with 1½-inch cast iron floor flange are available in sets of four. Also, tank can be furnished with Rochester gauge.

Black Steel Fuel Oil Tanks

Capacity....gallons	**275**
Depth....inches	44
Width....inches	27
Length....inches	60
Gage No.	14
Weight....pounds	215

FURNACES AND AIR CONDITIONING UNITS

A complete stock of cast iron and steel gravity furnaces, also gas-fired, stoker-fired and oil-fired air conditioning units is carried at each McDonald Branch.

You are invited to consult our nearest branch for complete information, catalogs and quotations on the most modern units available.

COMPLETE HEATING PLANTS—REPLACEMENT UNITS

CHEYENNE, WYOMING
1512 O'Neill Avenue
Phone: 7641

DENVER, COLORADO
1950 Blake Street
Phone: Cherry 5109

DES MOINES, IOWA
629 So. W. 9th St.
Phone: 33274

DUBUQUE, IOWA
350 Dodge Street
Phone: 510

JOPLIN, MISSOURI
532 Kentucky Avenue,
Phone: 1243

KANSAS CITY, MISSOURI
1410 Union Avenue
Phone: Harrison 6930

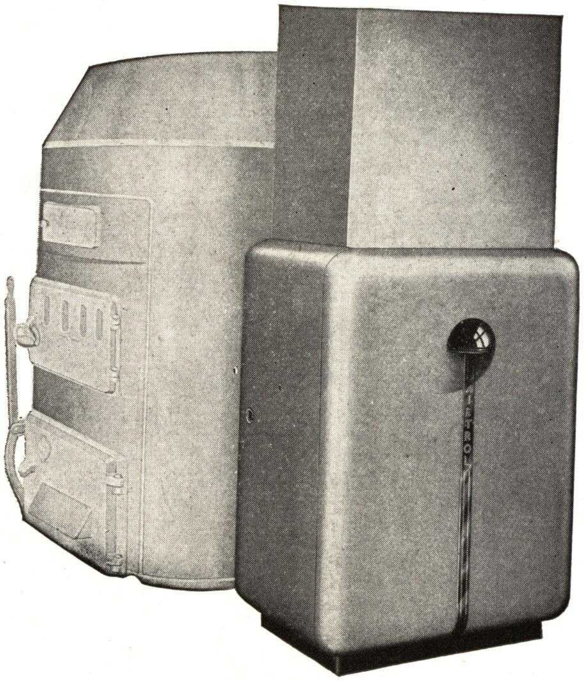
MINNEAPOLIS, MINNESOTA
822 3rd Street, South
Phone: Atlantic 6303

OMAHA, NEBRASKA
1201 Dodge Street
Phone: Atlantic 8055

SIOUX CITY, IOWA
110 4th Street
Phone: 85576

SIOUX FALLS, SO. DAKOTA
134 E. 10th Street
Phone: 4746

Airtrol Air Conditioning Units



An efficient blower unit that can be easily installed. Built like a modern refrigerator of all welded construction. Constructed so that it will enter any doorway, unit can be quickly installed by connecting to the furnace and return air ducts.

The large access door is removable to provide cooling ventilation by circulating cool filtered air during summer months.

Unit is equipped with a variable speed pulley, providing a wide range of air delivery.

Every part of the unit—heavy gage steel cabinet, blower assembly, long-hour duty motor, filters, self-aligning bearings—is all of the highest quality obtainable.

Unit is furnished wired and ready for installation. This construction eliminates on-the-job assembly. The unit has no slip joints, bolts, or sheet metal screws required in assembly, eliminating noise and rattles.

Finished in glossy silver grey enamel, trimmed in maroon and chrome.

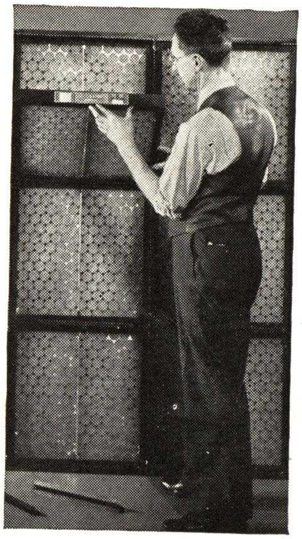
No.	Motor Size Hp.	Wheel Diam. In.	CFM. Range	Average BTU. per Hour Min.	Max.
10	⅙	10⅝	1000—1440 @ ⅛″ *S.P.	62,000	110,000
12	¼	12	1050—2020 @ ¼″ *S.P.	110,000	128,000
14	¼	14½	1670—2140 @ ¼″ *S.P.	128,000	165,000
16	⅓	16	1950—3650 @ ⅜″ *S.P.	165,000	250,000

No.	Average Furnace Size Inches	Average Pipe Area Inches	Outlet Inches	Inlet Inches	Overall Dimensions—Inches Height	Depth	Width
10	18—24	360—580	26x18	12⅜x11¾	44	24	32
12	24—28	580—750	26x18	14¼x14⅝	44	24	32
14	28—30	750—980	29x24½	16½x14⅝	55	30½	35
16	30—34	980—1480	29x24½	18$\frac{3}{16}$x17⅛	55	30½	35

*Static pressure.

Dust-Stop Air Filters

For Industrial and Commercial Heating, Ventilating and Air-Conditioning Systems



L Type Frame

V Type Frame

A replacement-type filter designed to be discarded when loaded with dust and dirt. However, these filters can be given intermediate cleaning by rapping out or vacuum cleaning methods.

Two types of filter frames available for any frontal area, the L type and the V type, designed for the convenient and correct handling of dust-stop air filters. Frame members may be assembled in any combinations to satisfy any cfm. and space requirement. The type used is determined by space available for frames within the duct or plenum chamber. The L type frame takes less depth but requires a larger face area than the V type frame for the same cfm. capacity.

L Frame Cells are available in two depths. One holds two 20x20x1-inch dust-stops, the other holds four filters. Each cell has a rated capacity of 800 cubic feet per minute at a velocity of 300 feet per minute.

Two No. 1 Filters Deep....................per cell	**$6.00**
Four No. 1 Filters Deep....................per cell	**7.50**

V Frame Cells hold four 20x25x1-inch dust-stops. Each cell has a rated capacity of 1000 cubic feet per minute at a velocity of 300 feet per minute.

Four No. 1 Filters Deep....................per cell	**$10.00**

Prices include all metal frame parts, bolts, nuts, gaskets, and filters, ready for assembly.

Replacements

20x20x1-Inch..................................each	**$.60**
20x25x1-Inch..................................each	**.69**

Dust-Stop Air Filters

For Filter-Equipped Residential Warm-Air Furnaces and Air-Conditioning Systems

A replacement-type air filter which provides an efficient method of cleaning air of dust, lint and pollen.

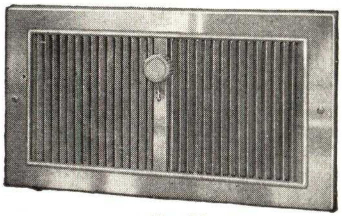
Constructed of packs of glass fibers faced with metal grilles and bound on the edges with a fiberboard frame. The glass fibers are inorganic, chemically stable resistant to heat and corrosive vapors, and do not absorb the non-odorous, non-evaporating adhesive with which they are coated. The fibers, packed to proper density, form an effective medium for air filtration.

Standard Size.in.	**20x25x2**	**20x20x2**	**16x25x2**	**16x20x2**	**15x20x2**
Each............	**$1.65**	**1.50**	**1.50**	**1.50**	**1.50**

No. 10 Series Air Control Air Conditioning Registers and Grilles

With Adjustable Vertical Fins and Horizontal Multi-Louver Valve

Provides both vertical and horizontal control of the air flow. Any degree of vertical deflection may be secured ranging from 15° upward to 30° downward. Each fin may be adjusted to obtain any desired horizontal distribution of the air to any part of the room, regardless of register location. A special tool is provided to adjust the fins.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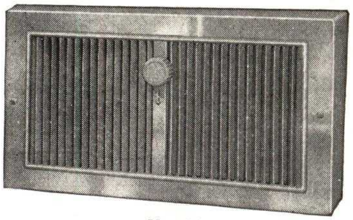
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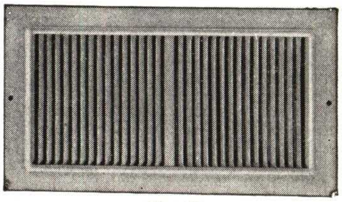

No. 11

No. 13

Made of the best heavy gage steel. Furnished as standard without installation frames—may be installed without frames or with frames A, B, C, or D.

Overall dimensions of face, duct opening plus 1¼ inches.

Prime coat: a light buff primer, moisture resistant, infra-red baked—may be readily painted to match walls. This finish is standard; bronze also available.

Painted finishes: in ivory, white, black, oak.

Electroplated finishes, prices on application.

No. 10 Sidewall Register: For flush installation. Complete with adjustable multi-shutter valve. Standard with self sealing gasket.

No. 12 Baseboard Register: Outer edge of margin projects ⅞ inch, bringing the face slightly beyond the surface of the baseboard. Complete with adjustable multi-shutter valve.

No. 11 Sidewall Grille: For flush installation. Return air intake; has no valve.

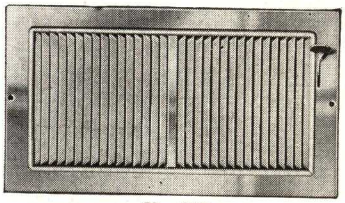
No. 13 Baseboard Grille: Intake with ⅞-inch projection. Does not have a valve.

Duct Opening Length by Height Inches	No. 10 Sidewall Register		No. 11 Sidewall Grille		No. 12 Baseboard Register		No. 13 Baseboard Grille		Actual Free Areas Sq. In.	Wt. Lb.
	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each		
8x4	$1.75	$1.90	$.80	$.95	$1.85	$2.00	$.90	$1.05	19	..
8x5	1.85	2.00	.85	1.00	1.95	2.10	.95	1.10	25	..
8x6	1.95	2.10	.90	1.05	2.05	2.20	1.00	1.15	31	..
10x4	1.85	2.00	.85	1.00	1.95	2.10	.95	1.10	24	..
10x5	1.95	2.10	.90	1.05	2.05	2.20	1.00	1.15	32	..
10x6	2.05	2.20	.95	1.10	2.15	2.30	1.05	1.20	40	..
10x8	2.20	2.40	1.00	1.20	2.30	2.50	1.10	1.30	49	..
12x4	1.95	2.10	.90	1.05	2.05	2.20	1.00	1.15	30	..
12x5	2.15	2.30	1.00	1.15	2.25	2.40	1.10	1.25	39	..
12x6	2.25	2.45	1.05	1.25	2.35	2.55	1.15	1.35	49	..
12x8	2.40	2.60	1.10	1.30	2.55	2.75	1.25	1.45	60	..
14x4	2.05	2.20	.95	1.10	2.15	2.30	1.05	1.20	35	..
14x5	2.25	2.45	1.05	1.25	2.35	2.55	1.15	1.35	47	..
14x6	2.40	2.60	1.10	1.30	2.55	2.75	1.25	1.45	58	..
14x8	2.60	2.80	1.20	1.40	2.75	2.95	1.35	1.55	71	..
24x4	2.80	3.05	1.30	1.55	2.95	3.20	1.45	1.70	61	..
24x5	2.95	3.20	1.35	1.60	3.10	3.35	1.50	1.75	81	..
24x6	3.50	3.80	1.60	1.90	3.70	4.00	1.80	2.10	101	..
24x8	4.05	4.40	1.85	2.20	4.25	4.60	2.10	2.45	123	..
30x4	3.40	3.70	1.55	1.85	3.60	3.90	1.75	2.05	75	..
30x5	3.70	4.00	1.70	2.00	3.90	4.20	1.90	2.20	98	..
30x6	4.25	4.60	1.95	2.30	4.50	4.85	2.20	2.55	122	..
30x8	4.80	5.20	2.20	2.60	5.05	5.45	2.50	2.90	149	..

No. 110 Series Air Control Air Conditioning Registers and Grilles

With Adjustable Vertical Fins and Single Shutter Valve

Fins may be easily adjusted to give any desired horizontal distribution of air. Fin construction provides unusually large free area and low resistance. Single shutter valve mechanism operates easily, yet has positive spring tension and requires no adjustment. A special tool is provided to adjust the fins.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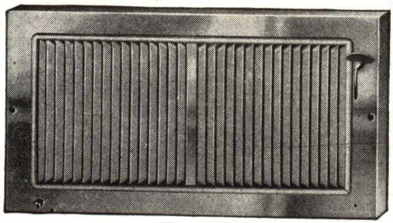
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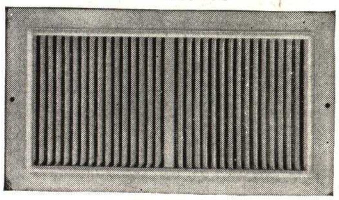

No. 11

No. 13

Made of the best heavy gage steel. Furnished as standard without installation frames—may be installed without frames or with frames A, B, C, or D.

Overall dimensions of face, duct opening plus 1¼ inches.

Prime coat: a light buff primer, moisture resistant, infra-red baked—may be readily painted to match walls. This finish is standard; bronze also available.

Painted finishes: in ivory, white, black, oak.

Electroplated finishes, prices on application.

No. 110 Sidewall Register: For flush installation. Complete with single shutter valve. Standard with self sealing gasket.

No. 112 Baseboard Register: Outer edge of margin projects ⅞ inch, bringing the face slightly beyond the surface of the baseboard. Complete with single shutter valve.

No. 11 Sidewall Grille: For flush installation. Return air intake; has no valve.

No. 13 Baseboard Grille: Intake with ⅞-inch projection. Does not have a valve.

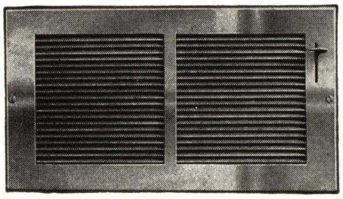
Duct Opening Length by Height Inches	No. 110 Sidewall Register		No. 112 Baseboard Register		No. 11 Sidewall Grille		No. 13 Baseboard Grille		Actual Free Areas Sq. In.
	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each	
8x4	$1.25	$1.40	$1.35	$1.55	$.80	$.95	$.90	$1.05	19
8x5	1.35	1.50	1.45	1.65	.85	1.00	.95	1.10	25
8x6	1.45	1.60	1.55	1.75	.90	1.05	1.00	1.15	31
10x4	1.30	1.45	1.40	1.60	.85	1.00	.95	1.10	24
10x5	1.40	1.60	1.50	1.70	.90	1.05	1.00	1.15	32
10x6	1.50	1.70	1.60	1.80	.95	1.10	1.05	1.20	40
10x8	1.65	1.85	1.75	1.95	1.00	1.20	1.10	1.30	49
12x4	1.45	1.60	1.55	1.70	.90	1.05	1.00	1.15	30
12x5	1.55	1.70	1.65	1.85	1.00	1.15	1.10	1.25	39
12x6	1.60	1.80	1.70	1.95	1.05	1.25	1.15	1.35	49
12x8	1.75	1.95	1.90	2.10	1.10	1.30	1.25	1.45	60
14x4	1.50	1.70	1.60	1.80	.95	1.10	1.05	1.20	35
14x5	1.65	1.85	1.75	1.95	1.05	1.25	1.15	1.35	47
14x6	1.80	2.00	1.90	2.10	1.10	1.30	1.25	1.45	58
14x8	1.95	2.15	2.10	2.30	1.20	1.40	1.35	1.55	71
24x4	2.05	2.30	2.20	2.45	1.30	1.55	1.45	1.70	61
24x5	2.15	2.40	2.30	2.55	1.35	1.60	1.50	1.75	81
24x6	2.55	2.85	2.75	3.05	1.60	1.90	1.80	2.10	101
24x8	2.95	3.30	3.20	3.55	1.85	2.20	2.10	2.45	123
30x4	2.50	2.80	2.70	3.00	1.55	1.85	1.75	2.05	75
30x5	2.70	3.00	2.90	3.20	1.70	2.00	1.90	2.20	98
30x6	3.10	3.45	3.35	3.70	1.95	2.30	2.20	2.55	122
30x8	3.50	3.90	3.75	4.15	2.20	2.60	2.50	2.90	149

No. 210 Series Air Control Air Conditioning Registers and Grilles

With Adjustable Horizontal Fins and Single Shutter Valve

The adjustable horizontal fins are set for 22° downward deflection, offsetting the natural rising tendency of warm air, but may be easily adjusted to give any desired deflection—up, straight, or down. The fin type construction provides unusually large free area and low resistance. The single shutter valve mechanism operates easily, yet has positive spring tension and requires no adjustment.

A special tool is provided to adjust the fins.



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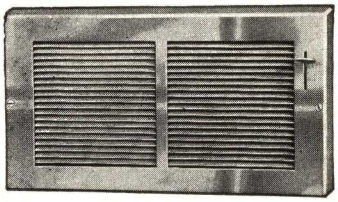

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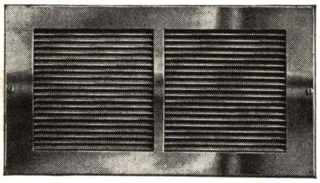

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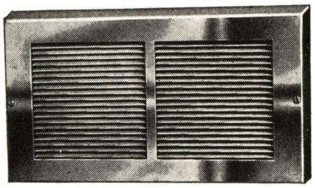


No. 213

Made of the best heavy gage steel. Furnished as standard without installation frames—may be installed without frames or with frames A, B, C, or D.

Overall dimensions of face, duct opening plus 1¼ inches.

Prime coat: a light buff primer, moisture resistant, infra-red baked—may be readily painted to match walls. This finish is standard; bronze also available.

Painted finishes: in ivory, white, black, oak.

Electroplated finishes, prices on application.

No. 210 Sidewall Register: For flush installation. Complete with single shutter valve. Standard with self sealing gasket.

No. 212 Baseboard Register: Outer edge of margin projects ⅞ inch, bringing the face slightly beyond the surface of the baseboard. Complete with single shutter valve.

No. 211 Sidewall Grille: For flush installation. Return air intake; has no valve.

No. 213 Baseboard Grille: Intake with ⅞-inch projection. Does not have a valve.

Duct Opening Length by Height Inches	No. 210 Sidewall Register		No. 211 Sidewall Grille		No. 212 Baseboard Register		No. 213 Baseboard Grille		Actual Free Areas Sq. In.	Wt. Lb.
	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each	Prime Coat Each	Painted Finish Each		
10x4	$1.30	$1.45	$.85	$1.00	$1.40	$1.60	$.95	$1.10	23	..
10x5	1.40	1.60	.90	1.05	1.50	1.70	1.00	1.15	30	..
10x6	1.50	1.70	.95	1.10	1.60	1.80	1.05	1.20	37	..
10x8	1.65	1.85	1.00	1.20	1.75	1.95	1.10	1.30	51	..
12x4	1.45	1.60	.90	1.05	1.55	1.70	1.00	1.15	28	..
12x5	1.55	1.70	1.00	1.15	1.65	1.85	1.10	1.25	36	..
12x6	1.60	1.80	1.05	1.25	1.70	1.95	1.15	1.35	45	..
12x8	1.75	1.95	1.10	1.30	1.90	2.10	1.25	1.45	63	..
14x4	1.50	1.70	.95	1.10	1.60	1.80	1.05	1.20	33	..
14x5	1.65	1.85	1.05	1.25	1.75	1.95	1.15	1.35	43	..
14x6	1.80	2.00	1.10	1.30	1.90	2.10	1.25	1.45	54	..
14x8	1.95	2.15	1.20	1.40	2.10	2.30	1.35	1.55	75	..
24x4	2.05	2.30	1.30	1.55	2.20	2.45	1.45	1.70	56	..
24x5	2.15	2.40	1.35	1.60	2.30	2.55	1.50	1.75	75	..
24x6	2.55	2.85	1.60	1.90	2.75	3.05	1.80	2.10	93	..
24x8	2.95	3.30	1.85	2.20	3.20	3.55	2.10	2.45	128	..
30x4	2.50	2.80	1.55	1.85	2.70	3.00	1.75	2.05	69	..
30x5	2.70	3.00	1.70	2.00	2.90	3.20	1.90	2.20	93	..
30x6	3.10	3.45	1.95	2.30	3.35	3.70	2.20	2.55	116	..
30x8	3.50	3.90	2.20	2.60	3.75	4.15	2.50	2.90	151	..

Air Control Installation Frames

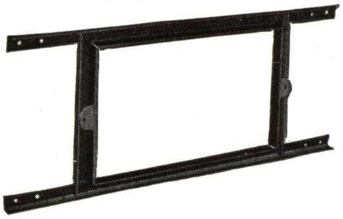
Type A—For Sidewall Installation

May be used on new or remodeled installations.

Frame is made of heavy gage band iron, sized to fit inside of the stackhead. It is punched for nailing to studding, and slotted for stackhead straps; may be used with either regular shopmade stackheads, or with prefabricated heads. Lugs on either side are punched to receive the register screws.

May be used with any of the No. 10, 110, or 210 series Air Control registers and grilles.

Type B—For Sidewall Installation



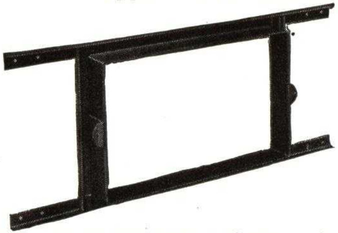
For new installations.

Frame itself is of heavy band iron; extension arms are of heavy angle iron, spot welded to the frame. Lugs on either side of the frame are threaded to receive the screws which hold register in place.

Extension arms fasten directly to the studs, eliminating blocking-in, and provide a solid foundation for stackhead and register. When installation is completed, the frame is imbedded in plaster.

May be used with Nos. 10, 11, 110, 210, and 211 sidewall Air Control registers and grilles.

Type C—For Baseboard Installation



For new installations.

Frame is of the same general construction as the Type B, except it extends ¾ inch beyond the plaster surface—making a contact with all baseboard registers and intakes.

May be used with Nos. 12, 13, 112, 212, and 213 registers and intakes.

Type D—For Baseboard Installation

A two-piece frame for adjusting sidewall registers and grilles to baseboard installation. The stackhead is flanged over this frame and the register is fastened to the frame—projecting the face flush with the baseboard. A streakproof installation results.

Used with Nos. 10, 11, 110, 210, and 211 registers and grilles.

Size Duct Length by Height Inches	Type A Each	Types B, C, or D Each	Wt. Lb.	Size Duct Length by Height Inches	Type A Each	Types B, C, or D Each	Wt. Lb.
8x4	$.20	$.55	..	12x5	$.25	$.70	..
8x5	.20	.60	..	12x6	.25	.70	..
8x6	.20	.65	..	12x8	.25	.80	..
10x4	.20	.60	..	14x4	.20	.65	..
10x5	.20	.65	..	14x5	.25	.70	..
10x6	.20	.65	..	14x6	.25	.80	..
10x8	.25	.70	..	14x8	.30	.85	..
12x4	.20	.65	..	....	...	...	..

Air Control Gravity Registers

With Removable Face

No. 70 Baseboard Registers

Has air seal inner frame, which, although easy to install, prevents streaking either from air inside duct or from basement air around the outside of the duct. The frame is fastened securely to the wall or joists and the duct is flanged over the edge of the frame. The removable face hooks over a flange on the bottom of the frame and is drawn up tight with two screws. The removable face is equipped with a flexible gasket, that gives a streakproof seal against the edge of the stackhead. The air seal inner frame also covers the opening in the wall and floor around the duct, sealing against leakage of basement air.

Horizontal fins may be easily adjusted for forced air applications. Set at the correct angle for a minimum of resistance with gravity flow, the fins may be deflected downward with forced air. This eliminates drafts, stratification, cold floors, etc. A special tool is provided, allowing adjustment without damage to the finish.

Valve mechanism is operated by knob operator that works with a twist of the wrist, yet holds securely in any position. Of rugged construction, the operator will withstand hard usage, requires no adjustment, and operates with equal efficiency after years of use.

Metalescent (dark bronze) finish is standard; may be painted to match walls. Painted finishes include prime coat, black, white, ivory, or grained oak. Also furnished in electroplated chrome-nickel.

Size Duct, Length by Height..in.	**10x8**	**12x8**	**12x9**	**13x11**
Metalescent..........each	**$2.00**	**$2.40**	**$3.00**	**$5.25**
Painted Finishes..........each	**2.35**	**2.90**	**3.50**	**6.00**
Chrome Plated..........each	**3.50**	**3.95**	**4.50**	**7.50**
Class No..........	72¼	72¼	73¼	75⅞
Projection from Wall at Base..in.	2¼	2¼	3¼	5⅞
Overall Width..........inches	13⅜	15⅜	15⅜	16⅜
Overall Height..........inches	11 7/16	11 7/16	12 5/16	13 13/16
Floor to Face Opening....inches	2⅛	2⅛	2⅛	2⅛
Free Area..........sq. in.	61	75	83	113
Equivalent Pipe Size......inches	8	9	10	12
Weight..........pounds	....	....	....	.....

No. 80 Sidewall Registers

Styled to harmonize with the No. 70, this register is adaptable for any wall installation above the baseboard. Furnished complete with removable installation frame. Frame fastens to stackhead; the face is drawn tightly to the wall with machine screws.

Embodies the features of the baseboard register: Knob operated valve mechanism opens with a twist of the wrist. Adjustable fins—set at the ideal angle for gravity flow—adjustable for forced air.

Furnished in same finishes as No. 70.

Size Duct, Length by Height..........inches	**10x8**	**12x8**
Metalescent..........each	**$1.50**	**$1.75**
Painted Finishes..........each	**1.80**	**2.10**
Chrome Plated..........each	**2.85**	**3.30**
Overall Width..........inches	11¾	13¾
Overall Height..........inches	10	10
Free Area..........sq. in.	59	72
Weight..........pounds	....	....

Air Control Return Air Intakes

No. 60

For flush installations on the baseboard or in stair risers. The narrow bottom margin results in a low overall height—height listed plus ½ inch.

Also available with horizontal fins—No. 260.

Size Duct......inches	**14x4**	**14x5**	**24x4**	**24x5**	**30x4**	**30x5**
Prime Coat or Metalescent..........each	**$1.00**	**$1.35**	**$1.45**	**$1.50**	**$2.15**	**$2.50**
White or Oak....each	**1.40**	**1.70**	**1.75**	**1.80**	**3.00**	**3.35**
Weight.......pounds	....	....	....	....	....	....

No. 61

For installation in the baseboard. Outer edge of margin projects ⅞ inch, bringing the face slightly beyond the surface of the baseboard. The narrow bottom margin results in a low overall height—height listed plus ½ inch.

Also available with horizontal fins—No. 261.

Size Duct......inches	**14x4**	**14x5**	**24x4**	**24x5**	**30x4**	**30x5**
Prime Coat or Metalescent..........each	**$1.10**	**$1.45**	**$1.60**	**$1.65**	**$2.35**	**$2.70**
White or Oak....each	**1.50**	**1.80**	**1.90**	**1.95**	**3.20**	**3.55**
Weight.......pounds	....	....	....	....	....	....

No. 62

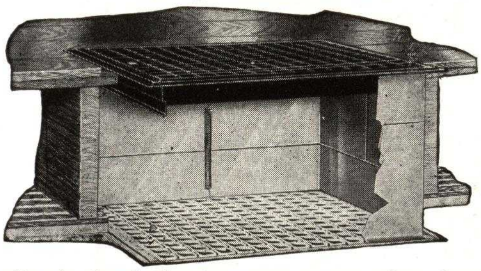
For installation in the baseboard. Made in projections of 3¼ and 4¼ inches—projection desired should be specified in ordering.

Also available with horizontal fins—No. 262.

Size Duct..........inches	**14x8**	***14x10**	**24x8**	**30x8**	***30x10**
Prime Coat or Metalescent..........each	**$2.25**	**$2.50**	**$3.25**	**$4.50**	**$5.00**
White or Oak........each	**2.75**	**3.00**	**3.60**	**5.50**	**6.25**
Weight..........pounds	....	.....	....	....	.....

*Recommended by N.W.A.H.A.C. Code: 14x10 for 12-inch pipe; 30x10 for 16-inch pipe.

No. 300 Air Control Adjustable Ceiling Ventilators



Permits air circulation to upper rooms where heating is provided by pipeless furnaces, stoves, space heaters, etc. Has a multi-shutter valve, making it possible to close the ventilator when heat is not required.

Consists of a black floor register, a white face, and a connecting telescoping metal box—adjustable for any floor to ceiling thickness. To install ventilators: Put the floor boxes in the hole cut in the floor. Put the white face and box through the opening at an angle. Draw the white face up to the ceiling and fasten the springs in the side of the box—the springs telescope the box and hold the white face to the ceiling. The black register is then put into the floor opening.

Furnished complete with register, face, and box. Packed individually, fully assembled, ready for installation.

Size Opening...in.	**8x10**	**8x12**	**9x12**	**10x12**	**10x14**	**12x14**
No. 300......each	**$2.50**	**3.00**	**3.25**	**3.85**	**4.50**	**5.15**

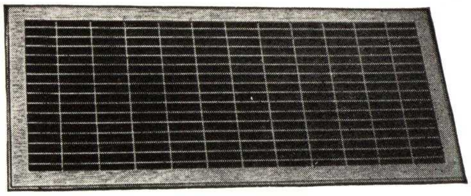
Air Control Floor Registers and Return Air Faces

With Rigid-Lock Fret Construction

No. 40 Floor Registers

No. 41 Return Air Faces

No. 40



No. 41

No. 40 Floor Registers. The added strength of the rigid-lock fret construction and the heavy gage metal frets provide a solid, level walking surface. Fret spacing of 7/16 inch between frets has ample free area, yet is heelproof. The oval edged frets give a smooth surface that does not show wear. Each fret is securely locked to each crossing fret and to the margin—transmitting the load over the entire face. The improved valve design will not stick or gum with paint. Sturdy operating knob may be foot operated—held in any position with spring tension. The louvers are made of heavy gage steel—embossed for extra strength.

No. 41 Return Air Faces feature the rigid-lock fret construction, offering added strength. The medium mesh, 7/16 inch between frets, eliminates the necessity of using standard and close mesh faces.

Overall Dimensions of face, size listed plus 1 13/16 inches.

*Finishes—also metalescent.

†Painted finishes—furnished in any of the following: white, ivory, walnut, prime coat.

NOTE: Black japan, metalescent, and oak are standard.

No. 40 Floor Registers

Size to Fit Opening Inches	*Black Japan Each	†Oak Each	Free Area Sq. In.	No. per Case	Ship. Wt., Lb. per Case	Size to Fit Opening Inches	*Black Japan Each	†Oak Each	Free Area Sq. In.	No. per Case	Ship. Wt., Lb. per Case
4x8	$1.35	$1.45	22	10	25	9x12	$2.15	$2.35	84	10	58
4x10	1.55	1.65	28	10	29	9x14	3.20	3.40	98	10	69
4x12	1.70	1.85	34	10	34	10x10	2.25	2.45	77	5	30
4x14	2.25	2.40	40	10	38	10x12	2.40	2.60	92	5	33
6x8	1.55	1.65	35	10	34	10x14	3.40	3.65	109	5	37
6x10	1.60	1.70	45	10	39	10x16	4.50	4.80	124	5	42
6x12	1.80	1.95	54	10	44	10x18	5.55	5.85	141	5	46
6x14	2.55	2.75	63	10	51	12x12	3.60	3.85	111	5	39
8x8	1.60	1.70	49	10	40	12x14	4.25	4.55	132	5	45
8x10	1.70	1.85	61	10	48	12x16	5.25	5.55	149	5	50
8x12	1.90	2.05	74	10	54	12x18	6.45	6.80	169	5	55
8x14	2.95	3.15	87	10	63	14x14	5.65	6.00	154	5	53
8x16	3.85	4.10	99	10	72	14x16	6.85	7.20	177	5	54
8x18	5.05	5.35	112	10	78	14x18	8.10	8.50	197	5	63

No. 41 Return Air Faces

Size to Fit Opening Inches	*Black Japan Each	†Oak Each	Free Area Sq. In.	No. per Case	Ship: Wt., Lb. per Case	Size to Fit Opening Inches	*Black Japan Each	†Oak Each	Free Area Sq. In.	No. per Case	Ship. Wt., Lb. per Case
4x8	$.80	$.90	23	10	18	9x24	$3.30	$3.70	172	5	38
4x10	.90	1.00	29	10	21	9x30	3.70	4.15	216	5	47
4x12	1.10	1.25	35	10	25	10x10	1.60	1.80	78	10	40
4x14	1.40	1.55	42	10	28	10x12	1.70	1.90	94	10	46
4x16	1.60	1.80	47	10	31	10x14	2.00	2.25	110	10	52
4x24	2.80	3.15	75	10	44	10x16	2.30	2.60	126	10	58
4x30	3.20	3.60	95	10	54	10x24	3.40	3.80	192	5	40
6x8	.90	1.00	36	10	24	10x30	3.75	4.20	241	5	50
6x10	1.00	1.10	45	10	28	12x12	2.20	2.45	114	10	52
6x12	1.20	1.35	56	10	39	12x14	2.50	2.80	134	10	58
6x14	1.55	1.75	64	10	36	12x16	2.70	3.00	152	10	66
6x16	1.90	2.15	75	10	40	12x24	3.75	4.20	232	5	48
6x18	2.20	2.45	84	10	44	12x30	4.00	4.50	290	5	58
6x24	3.00	3.35	112	10	56	14x14	2.90	3.25	157	10	66
6x30	3.40	3.80	141	5	34	14x16	3.10	3.45	179	10	74
8x8	1.00	1.10	50	10	29	14x24	4.10	4.60	270	5	54
8x10	1.10	1.25	63	10	35	14x30	4.60	5.15	338	5	66
8x12	1.30	1.45	75	10	39	16x16	3.60	4.05	205	5	41
8x14	1.65	1.85	88	10	44	16x18	3.80	4.25	237	5	46
8x16	2.00	2.25	101	10	49	16x24	4.40	4.95	311	5	61
8x18	2.40	2.70	113	10	54	16x30	5.50	6.15	388	5	75
8x24	3.20	3.60	152	5	35	18x18	4.20	4.70	258	5	50
8x30	3.60	4.05	193	5	42	18x24	4.80	5.40	346	5	67
9x10	1.30	1.45	64	10	36	18x30	6.10	6.85	439	5	84
9x12	1.50	1.70	85	10	42	20x24	5.40	6.05	386	5	74
9x14	1.85	2.05	100	10	48	20x30	6.70	7.50	488	5	93
9x16	2.15	2.40	115	10	54	24x24	7.00	7.85	464	5	87
9x18	2.55	2.85	128	10	59	24x30	8.80	9.85	584	5	109

Air Control Register and Grille Selection

For Residential Air Conditioning

Correct register and grille selection is essential for proper air distribution—which is one of the most important factors in the success or failure of an air conditioning system. Realizing the importance of furnishing accurate information in a simple, condensed form, Air Control engineers have developed the following simplified register and grille selection data—based on the performance of Air Control registers and grilles.

Selection Based on No. 10 Series. Data may, in general, be applied to No. 110 and No. 210 Series, allowing for limitations in type of directional control.

Selection of Supply Registers. Three general types: High sidewall—locations 6 feet or more above the floor. Baseboard—locations in the baseboard. Low sidewall—locations just above the baseboard.

High Sidewall

1. Predetermine the horizontal deflection setting. Use a deflection that will blanket exposed walls.
2. Select the proper velocity. Use a velocity sufficient to throw across the room. Use Table 1 as a guide.
3. Determine the register size—based on velocity required and volume per register. See capacity table below.

After Installation:

1. Set fins to give proper horizontal directional control. Use special tool furnished with Air Control registers.
2. Set stop to give desired up or down deflection.
   - A. Heating—D setting (15° down)—prevents stratification and streaked ceilings.
   - B. Cooling—U setting (15° upward)—prevents drafts in low ceiling rooms—diffuses the cold air before it drops into the living zone.
   - C. Combination heating and cooling—change stop semi-annually to give best conditions for both cycles.

Baseboard

1. Try to locate registers so that furniture placement will not interfere with the air flow, and so that occupants will not customarily be placed in front of register.
2. Predetermine the horizontal deflection setting—multi-flow types of deflection (with the fins set to spread the air) will give best results, as they diffuse the air very rapidly.
3. Select the proper velocity—use a velocity that will give the maximum circulation without drafts. Do not use velocities greater than shown in Table 2.
4. Determine the register size—based on velocity required and volume per register. See capacity table.

After Installation:

1. Set fins to give proper horizontal control. Use special tool furnished with Air Control registers.
2. Set stop to give desired up or down deflection.
   - A. Heating—D setting (15° down)—a slight downward deflection covers the floor with a blanket of warm air that eliminates cold floors and drafts.
   - B. Cooling—baseboard locations not recommended—where necessary to use them, a sharp 30° upward deflection will give the best results.

Low Sidewall

Same as baseboard except for stop setting—set stop one mark above D setting—30° downward.

Return Air Intakes. The location of return air intakes is not of primary importance. High velocities through return air intakes do not cause drafts unless a large volume of air is returned through one intake. Generally, velocities of 300 to 500 feet per minute are used so that high resistances will not result. Intakes may be sized from the capacity table.

Capacity Table

Size Duct Length by Height Inches	*Actual Free Area Sq. In.	Capacity, Cubic Feet per Minute at Various Velocities — Velocity, Feet per Minute 200	300	400	500	600	700	800	900	1000
8x4	19	26	39	52	65	78	91	104	117	130
8x5	25	34	52	68	86	104	120	136	155	172
8x6	31	43	64	86	107	128	149	172	192	213
10x4	24	34	51	68	85	102	118	136	152	169
10x5	32	45	67	90	112	134	156	180	201	223
10x6	40	55	83	110	138	166	193	220	248	276
10x8	49	68	101	136	169	202	237	272	304	338
12x4	30	41	62	82	104	124	145	164	186	207
12x5	39	55	82	110	137	164	192	220	247	274
12x6	49	68	102	136	170	204	237	272	305	339
12x8	60	83	125	166	208	250	291	332	374	415
14x4	35	49	74	98	123	148	172	196	221	246
14x5	47	65	97	130	162	194	227	260	292	324
14x6	58	81	121	162	202	242	282	324	363	403
14x8	71	98	147	196	246	294	344	352	442	491
24x4	61	85	128	170	213	256	298	340	383	426
24x5	81	112	168	224	281	336	393	448	505	561
24x6	101	140	209	280	349	418	489	560	628	698
24x8	123	170	255	340	426	510	596	680	766	851
30x4	75	103	155	206	259	310	362	412	465	517
30x5	98	136	205	272	341	410	477	544	614	682
30x6	122	169	254	338	424	508	593	676	762	847
30x8	149	207	311	414	518	622	725	828	932	1035

Table 1

Outlet Velocities Required for Supply Registers

High Sidewall Locations

Volume CFM.	Straight Flow Deflections — Length of Throw, Ft. 5-9	10-14	15-19	20-25	Multi-Flow Deflections — Length of Throw, Ft. 5-9	10-14	14-19	20-25
0–50	400	600	1000	....	500	1000	....	....
50–100	300	500	800	....	400	800	....	....
100–150	...	400	600	1000	300	600	1000	....
150–200	...	300	400	600	...	400	800	....
Over **200**	...	...	300	400	...	300	600	1000

Table 2

Maximum Outlet Velocities for Supply Registers

Baseboard or Low Sidewall Locations

Volume CFM.	Straight Flow Deflections — Length of Throw, Ft. 5-9	10-14	15-19	20-25	Multi-Flow Deflections — Length of Throw, Ft. 5-9	10-14	14-19	20-25
0–50	300	500	...	...	400	600	...	...
50–100	200	400	500	...	300	500	600	...
100–200	...	200	400	500	...	300	500	600
Over **200**	...	...	300	400	...	200	400	500

Table 3

†Resistance—Air Control Registers and Grilles

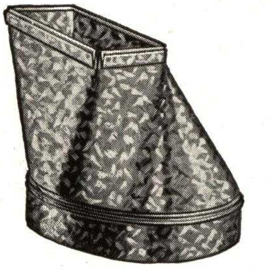
	Velocity, Feet per Minute — †Resistance 200	300	400	500	600	700	800	900	1000
Straight Flow Deflection.	.003	.005	.008	.012	.016	.022	.028	.036	.044
Multi-Flow Deflection...	.004	.006	.009	.014	.018	.024	.030	.039	.047

*Nos. 10 and 110 Series.

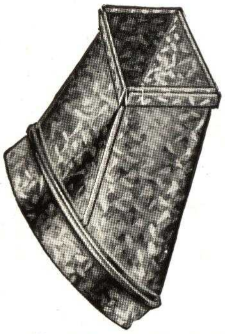
†Static pressure, inches water gauge.

Milcor Furnace Pipe and Fittings

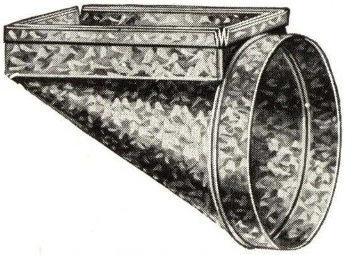
Galvanized Wall Stack Boots



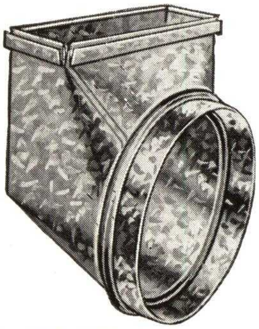
No. 129G, Universal Boot



No. 132G, 45° Angle Boot



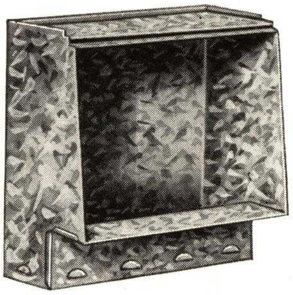
No. 138G, End Boot



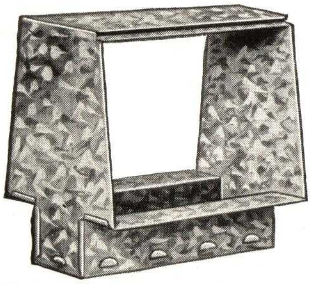
No. 140G, 90° Angle Boot

Size of Wall Stack	inches	10x3¼	12x3¼
Size of Collars	inches	8	9

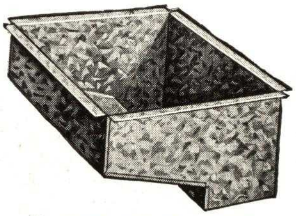
Galvanized Wall Stack Heads for Second Floor Registers



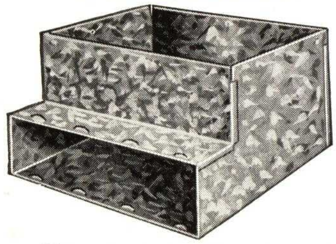
No. 101G, 2nd Floor Baseboard Wall Stack Head for Heating One Room



No. 102G, 2nd Floor Baseboard Wall Stack Head for Heating Two Rooms



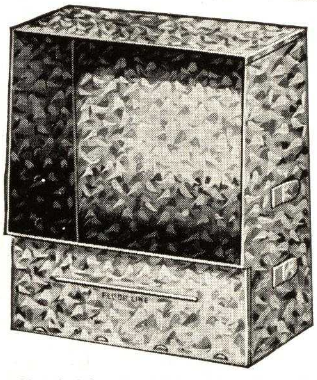
No. 107G, 2nd Floor Wall Stack Register Pan



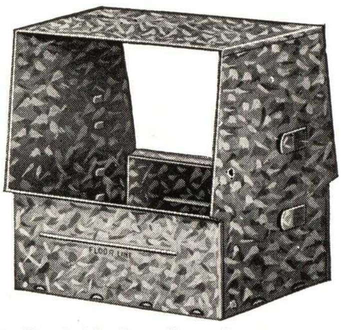
No. 108G, 2nd Floor Pan

		2¼-Inch Extension		Floor Type	
Size of Register	inches	10x8	12x8	10x8	12x9
Size of Wall Stack	inches	10x3¼	12x3¼	10x3¼	12x3¼

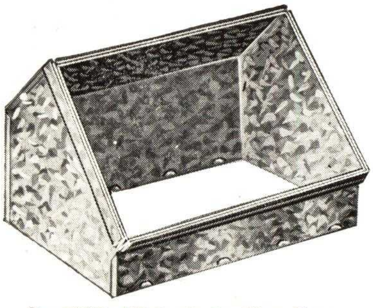
Galvanized Wall Pipe Heads for First Floor Baseboard Registers



No. 301G, First Floor Baseboard Head for Heating One Room



No. 302G, First Floor Baseboard Head for Heating Two Rooms



No. 309G, 45° Angle for First Floor Baseboard Heads

First Floor Heads for Heating One Room

Size of Registers	inches	10x8	12x8	12x9	13x11
Base Extension	inches	2¼	2¼	3¼	5⅞
Throat Size	inches	10x6⅛	12x6⅛	17x7⅛	13x9⅛
Pipe Size	inches	8	9	10	12

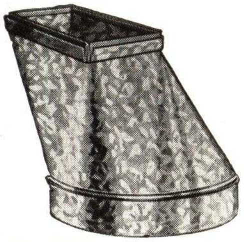
First Floor Heads for Heating Two Rooms

Size of Register	inches	10x8	12x8	12x9	13x11
Base Extension	inches	2¼	2¼	3¼	5⅞
Throat Size	inches	10x8⅝	12x8⅝	12x10⅝	13x14⅝
Pipe Size	inches	9	10	12	14

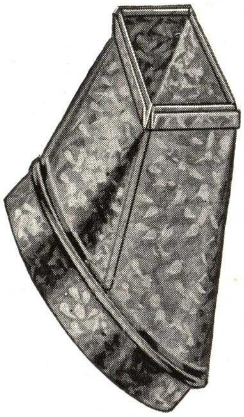
Milcor Furnace Pipe and Fittings

Galvanized Wall Stack Frictionless Boots

For First Floor



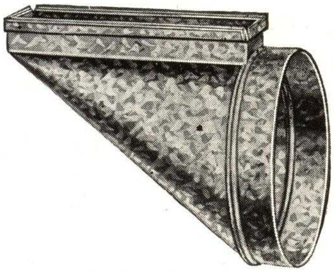
No. 311G, Universal Boot



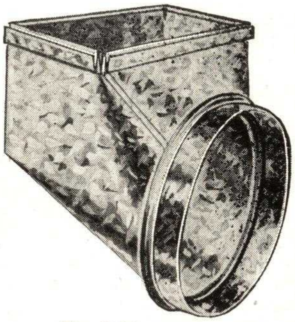
No. 314G, 45° Angle Boot

First Floor Boots for One Register

	10x8	12x8	12x9	13x11
Size of Register....inches	10x8	12x8	12x9	13x11
Base Extension....inches	2¼	2¼	3¼	5⅞
Throat Size........inches	10x6⅛	12x6⅛	12x7⅛	13x9⅛
Pipe Size..........inches	8	9	10	12



No. 317G, End Boot

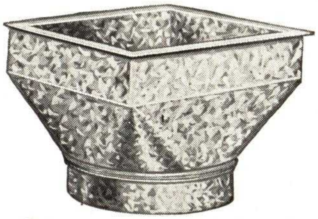


No. 340G, 90° Angle Boot

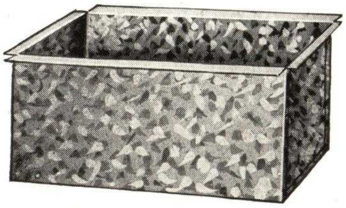
First Floor Boots for Two Registers

Size of Register...inches	10x8	12x8	12x9	13x11
Base Extension...inches	2¼	2¼	3¼	5⅞
Throat Size.......inches	10x8⅝	12x8⅝	12x10⅝	13x14⅝
Pipe Size..........inches	9	10	12	14

Floor Register Pans



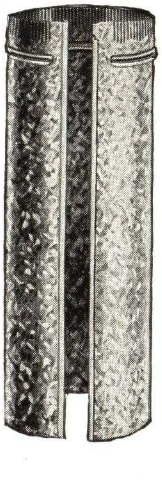
Galvanized Funnel Floor Plan



Galvanized Register Pan
6 Inches Deep—Flat, Solid Bottom

Size..............inches	8x10	9x12	10x12	12x14	14x16
Collar Size........inches	8	9	10	12	14

Galvanized Furnace Pipe



Assembled by simply hooking the edge, then placing the joint on a mandrel and closing the seam with a mallet. A unique lap is an important feature of the non-collapsible crimped end of the pipe. It provides a lock which cannot come apart, collapse or expand.

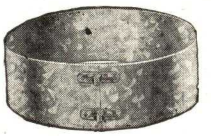
Made in sizes from 3 to 24 inches in diameter.

Furnished in 30, 26, and 24 gage.

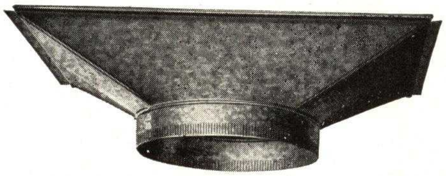
Shipped knocked down unless otherwise ordered. In sizes from 3 to 24 inches, the pipe is packed 25 joints of 24-inch lengths per bundle and 20 joints of 30-inch lengths per bundle.

Galvanized Adjustable Draw Bands

All 6 Inches Wide

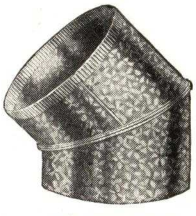


Style E Galvanized Transition Heads

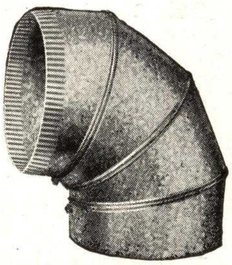


Top Size....in.	20x33	24x33	26x33	28x33	30x33	33x33
Collar Size..in.	14	16	18	20	22	24

Galvanized Furnace Pipe Elbows and Angles



45° Adjustable 2-Piece Angle



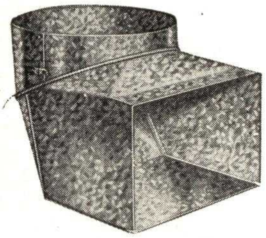
90° Adjustable Elbow

Galvanized elbows and angles have sections seamed together in sizes from 4 to 14 inches when made from 30 and 26-gage galvanized steel. The 3-inch elbows are riveted. All 24-gage elbows in diameters 5 through 12 inches are riveted. Elbows and angles from 16 to 24 inches are fastened with lugs and bolts.

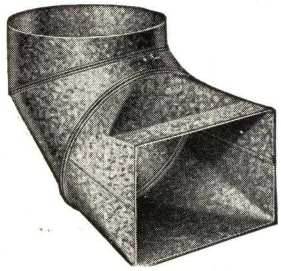
Furnished in 24, 26, and 30 gage.

Milcor Furnace Pipe and Fittings

Galvanized Return Air Shoes



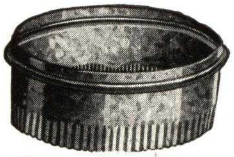
Style H Return Air Shoe
Adjustable to 45°



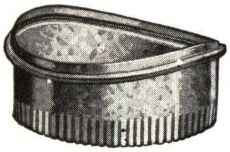
Style G Adjustable
Return Air Shoe

Collar Size... inches	14	16	18	20	22	24
Throat Size... inches	10x16	12x18	12x23	12x27	12x32	12x38

Casing Collars

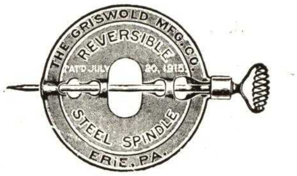


Style A Casing Collar
For Straight Hood



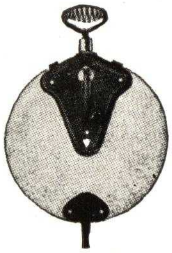
Style B Casing Collar
For Pitched Hood

Cast Iron Smoke Dampers



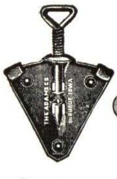
Made in sizes from 3 to 14 inches.

Warm Air Dampers

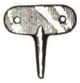


Made of 26-gage steel discs.

Damper Clips and Tail-Pieces



Damper Clip

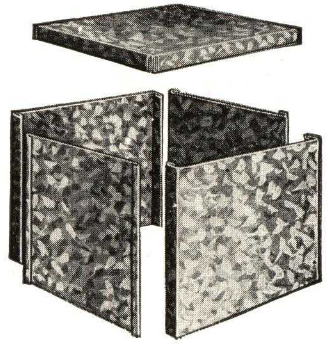


Tail-Piece

Non-breakable; requires no rivets.

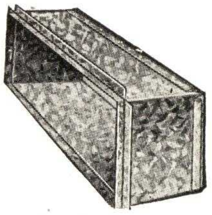
Milcor Forced Air Pipe and Fittings

No. 550 Plenum Chambers

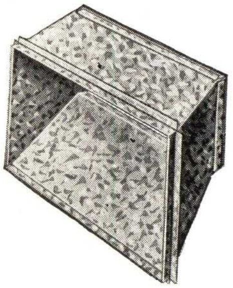


Furnished with top. Available in 26 gage. Shipped knocked down; easily assembled.

Galvanized Starting Collars



No. 501 Collar

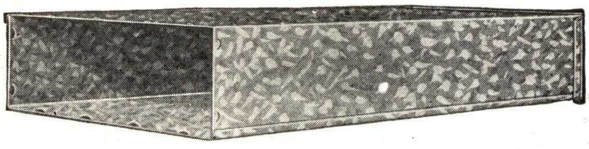


No. 502 Offset Collar

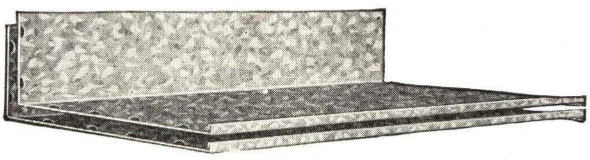
No. 501. Length, 4 inches; depth, 8 inches. Available in widths up to 36 inches.

No. 502. Length, 8 inches; depth, 8 inches. Available in widths up to 36 inches.

No. 500 Galvanized Duct for Trunk Line



Made Up

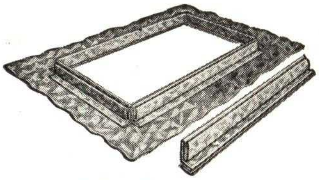


Knocked Down

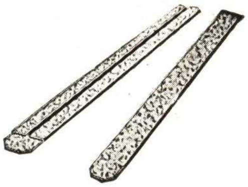
Made in 16, 32, and 64-inch lengths. Depth, 8 inches; 26 gage. Shipped nested, and assembled on the job.

Milcor Forced Air Pipe and Fittings

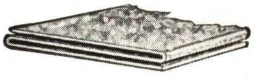
Galvanized Duct Accessories



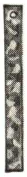
Collar Connections
30-Inch Length



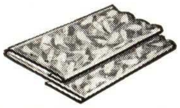
8-Inch Drive Straps



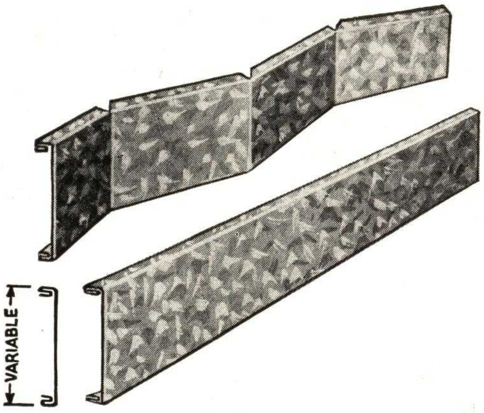
No. 516 S Hook
1 Inch Wide—60-Inch Lengths



Duct Hanger
9-Inch
Lengths



Lockjoint Connection
30-Inch Lengths

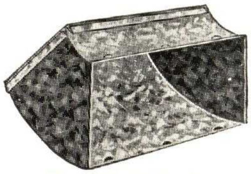


Side Rail

Side rail requires no extra seaming; can be snipped or notched to obtain reductions in the trunk line.

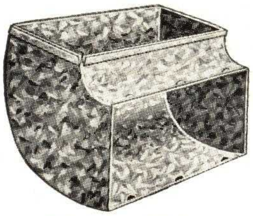
Furnished in 8 and 10-inch sizes; 8-foot lengths.

Duct Elbows and Angles



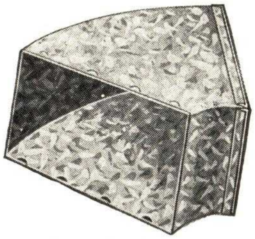
No. 510, 45° Angle

Standard 8-inch depth. Has 3-inch throat radius.



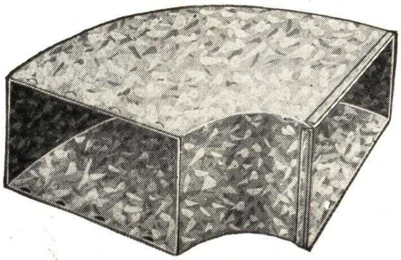
No. 511, 90° Elbow

Standard 8-inch depth. Has 3-inch throat radius.



No. 514, 45° Angle

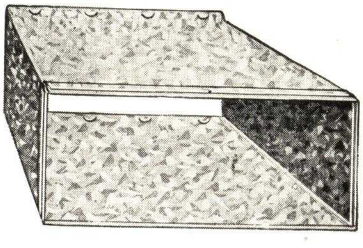
Standard 8-inch depth. Sizes 3x8 inches through 9x8 inches have 3-inch throat radius. Larger sizes have 5-inch throat radius.



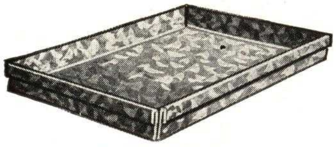
No. 515, 90° Elbow

Standard 8-inch depth. Sizes 3x8 inches through 9x8 inches have 3-inch throat radius; sizes 10x8 inches through 22x8 inches have 5-inch throat radius. Larger sizes have 7-inch throat radius.

Increaser and End Caps



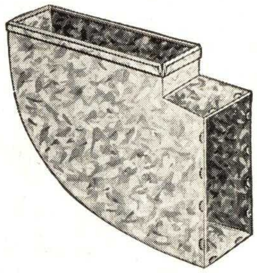
No. 512 Increaser
12 Inches Long



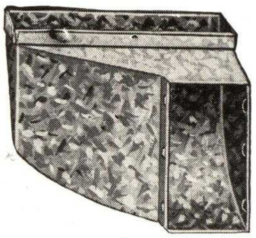
No. 517 End Cap

Milcor Forced Air Pipe and Fittings

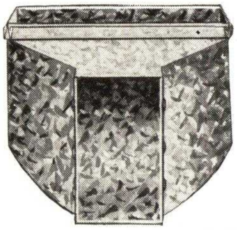
Takeoffs and Stack Adapters



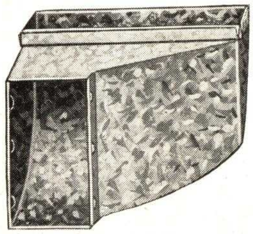
No. 587, Top Takeoff



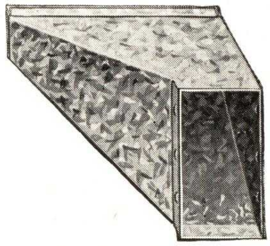
No. 561-L, Takeoff (Left)



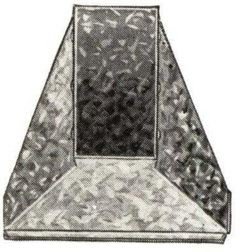
No. 561-C, Takeoff (Center)



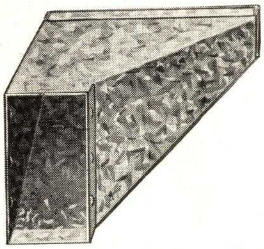
No. 561-R, Takeoff (Right)



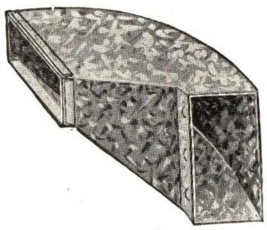
No. 588-L, Stack Adapter (Left)



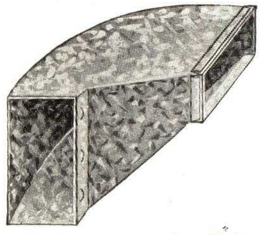
No. 588-C, Stack Adapter (Center)



No. 588-R, Stack Adapter (Right)



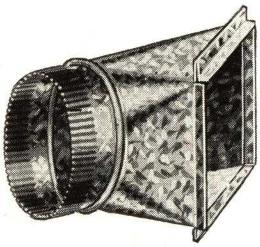
No. 589-L, Combination Takeoff and Stack Adapter (Left)



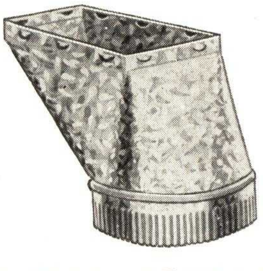
No. 589-R, Combination Takeoff and Stack Adapter (Right)

Furnished in sizes 4x8—10x3¼, 5x8—12x3¼, and 6x8—14x3¼ inches; depth, 8 inches; 26 gage.

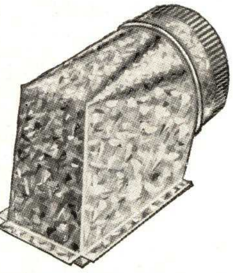
Trunk Line Transformers



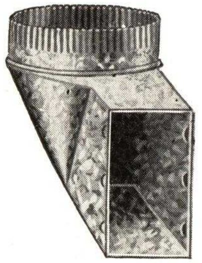
No. 590, 45° Takeoff



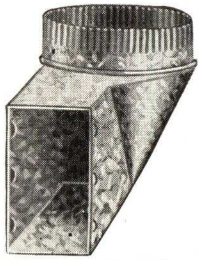
No. 592, Universal Transformer



No. 595, 90° Top Takeoff



No. 594-L Square to Round Top Takeoff (Left)



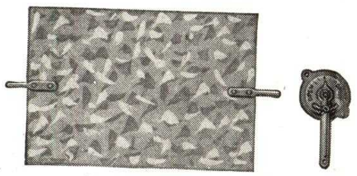
No. 594-R, Square to Round Top Takeoff (Right)

Nos. 590 and 595 furnished in the following sizes: 6-inch collar—7x6 inches; 7-inch collar—8x7 inches; and 8-inch collar—9x7 inches.

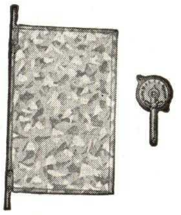
Nos. 592 and 594 furnished in the following sizes: 6-inch collar—4x8 inches; 7-inch collar—5x8 inches; and 8-inch collar—6x8 inches.

Milcor Forced Air Pipe and Fittings

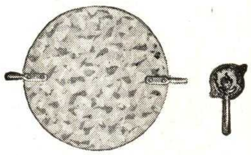
Rectangular Volume, Rectangular Splitter and Round Volume Dampers



Rectangular Volume Dampers



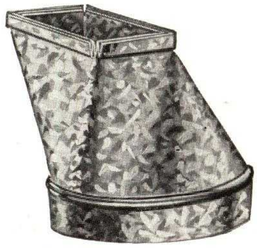
Rectangular Splitter Dampers



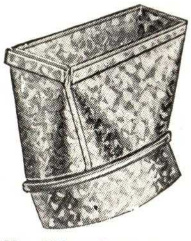
Round Volume Dampers

Made in all trunk sizes. Adjustable quadrant included. Round volume dampers are used in round branches where no friction damper is included in the stack head.

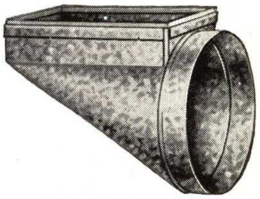
Galvanized Stack Boots for Forced Air Systems



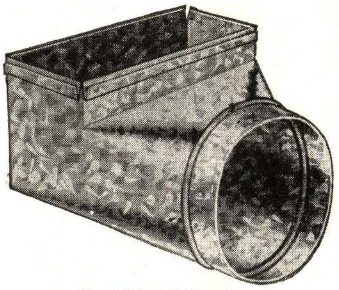
No. 729, Universal Boot



No. 732, 45° Angle Boot



No. 738, 90° End Boot

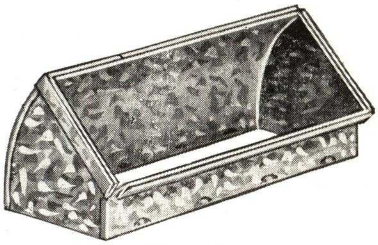


No. 740, 90° Angle Boot

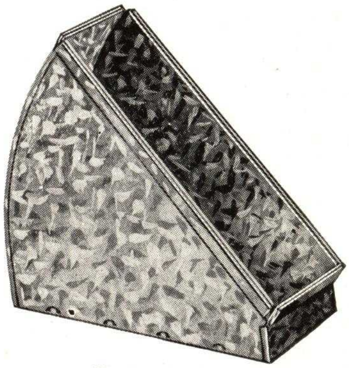
Designed to solve virtually any angle problem that might be encountered in making an installation.

Furnished in the following sizes: 10x3¼ 6 in. collar; 12x3¼ 7-in. collar; and 14x3¼ 8-in. collar.

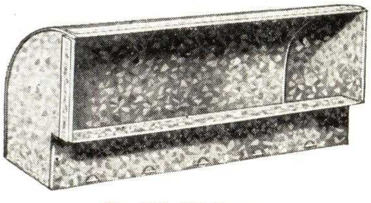
Galvanized Stack Fittings



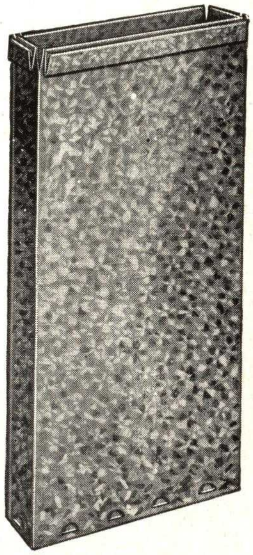
No. 710, 45° Angle



No. 714, 45° Angle



No. 711, 90° Elbow



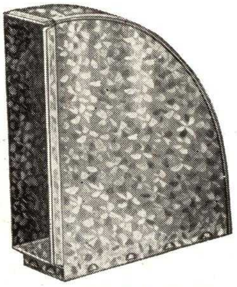
No. 700, Wall Stack

No. 710 angle, No. 711 elbow, and No. 714 angle fittings are furnished in the following sizes: 10x3¼; 12x3¼; and 14x3¼ inches.

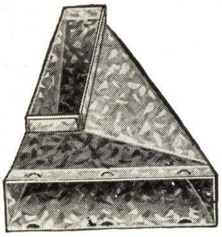
No. 700 wall stack is furnished in 6-inch adjustable, 6, 12, and 24-inch lengths.

Milcor Forced Air Pipe and Fittings

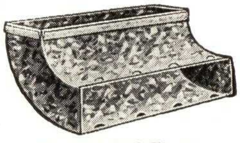
Galvanized Stack Fittings



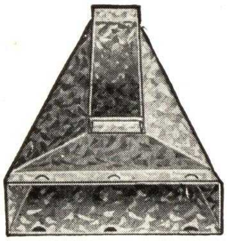
No. 715, 90° Elbow



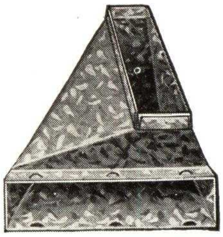
No. 760-L, Reverse Elbow (Left)



No. 717, 90° Elbow 3-Inch Throat Radius



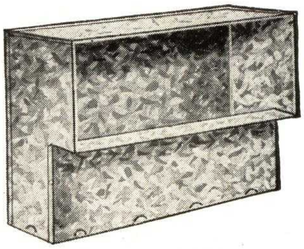
No. 760-C, Reverse Elbow (Center)



No. 760-R, Reverse Elbow (Right)

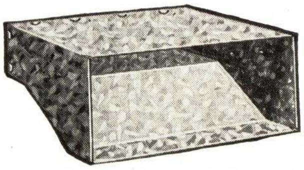
Furnished in the following sizes: 10x3¼; 12x3¼; and 14x3¼ inches.

Stack Heads for Forced Air Ducts



No. 703—28 Gage

State Size....in.	10x3¼			12x3¼			14x3¼		
Register Size.in.	10x4	10x5	10x6	12x4	12x5	12x6	14x4	14x5	14x6

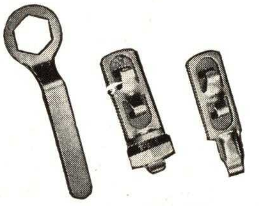


No. 707 Horizontal Stack Head

Can also be used as a vertical head for floor register.

Furnished in the following sizes: 10x4, 10x6, 10x8, 12x4. 12x6, 12x8, 14x4, 14x6, and 14x8 inches.

No. 4 Air Control Damper Control Sets



For use with either splitter or regular dampers.

A rattleproof set, easily applied by sliding the bearings over edge of damper and driving the prongs through the damper.

Can be installed in the shop or on the job without special tools. Head bearing is adjusted with wrench or pliers—after tightening the lock nut, the damper is tamper-proof. Rectangular tongue on bearings indicates position of damper in duct.

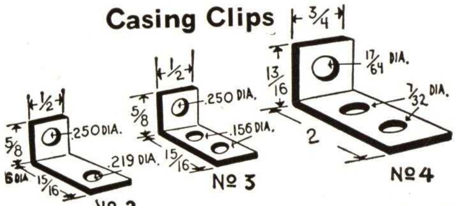
All steel parts—cadmium plated.

Set has ⅜-inch bearings and includes threaded bearing, tail bearing, lock nut.

Packed 12 sets in a package; weight, 1½ pounds.

No. 4 Sets.................................per doz. **$3.30**

Casing Clips



For fastening furnace casings, fittings, draw bands, etc.

No. 1 Adams Furnace Check Dampers

For end or side installation.

Check and Collar

Size..........inches	6	7	8	9	10	12
No. 1 Complete..each	$1.40	1.75	2.05	2.55	3.10	5.30
Weight........pounds	5	7	8	10	11½	19½

End Checks

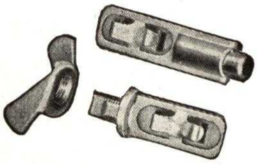
End Check......each	$.90	1.10	1.40	1.75	2.10	2.60
Weight........pounds	3	4	5	5½	6½	11

Collars

Collar...........each	$.50	.65	.65	.80	1.00	2.70
Weight.......pounds	2	3	3	4½	5	8½

No. 5 Air Control Damper Control Sets

With Spring Type End Bearings



For use with either splitter or regular dampers.

May be fastened on the damper by hammering the prongs through the sheet metal. The tail bearing has a coil spring that allows the bearing to retract—allowing the damper to be installed without bending. When installed, the bearing automatically snaps into the hole and locks, rattle free.

All steel parts—cadmium plated.

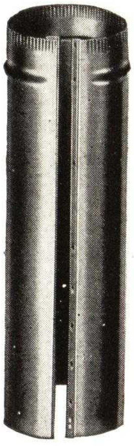
Set has ⅜-inch bearing and includes threaded bearing, spring type tail bearing, and wing nut.

Packed 12 sets in a package.

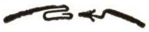
No. 5 Sets......................................each **$.34**

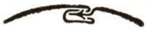
Milcor Stove Pipe and Fittings

Lock Joint Stove Pipe


Open

Locked


Open


Locked

Assembled by inserting the tongue of one edge into fold of opposite edge until it snaps together. When locked the pipe is positively secure and continuous for the full length of the joint, and will not collapse or expand.

Made from a specially developed steel which has a highly polished blue finish of enduring quality.

Regularly made in 2-foot lengths, 3, 4, 5, 6, and 7 inches in diameter, and is formed from 28 and 30-gage blue stove pipe iron.

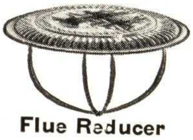
Can also be obtained in half joints 12 inches long and taper joints 24 inches long.

Shipped knocked down, nested, 25 lengths packed in heavy fiber carton.

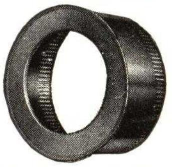
Weights per 100 Joints—24-Inch Lengths

Size......................inches	3	4	5	6	7
28 Gage..................pounds	110	140	173	205	238
30 Gage..................pounds	88	112	138	164	191

Flue Stop

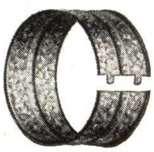


Flue Reducer



Made in all sizes, 7 to 6, 6 to 5, 6 to 4, and 6 to 3 inches.

Adjustable Flue Thimble

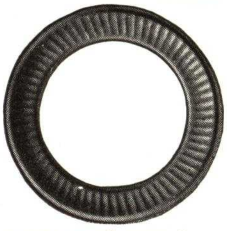


Very sturdy and cannot collapse.

Made in galvanized steel only.

Furnished in the following sizes: 4 to 5 to 6, 5 to 6 to 7, and 7 to 8 to 9 inches; 4 and 6-inch depths.

Stove Pipe Collars

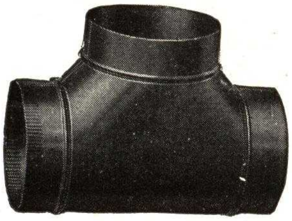


Made with wide or narrow flange, lacquered or plain, and in 3, 4, 5, 6, and 7-inch sizes.

Tapered Stove Pipe Joints

Made in the following sizes: 7 to 6, 6 to 5, and 5 to 4 inches; 28 and 30 gage. 24 inch lengths only.

Airflo Tee-Joint



Frictionless construction permits an equal draft in each pipe. Eliminates right angle corners entirely.

Size...in.	3x3x3	4x4x4	5x5x5	6x6x3	6x6x4	6x6x5	6x6x6	7x7x7
Gage....	28	28	28	28	28	28	28	26
Lgth..in.	12	12	12	12	12	12	12	12

Stove Pipe Elbows

Corrugated

Adjustable
Hemmed and Seamed

Corrugated. Corrugations are even and smooth. Long ends insure good fitting qualities and additional strength.

Made from Milcor blue sheets.

Has full 2⅜-inch ends. Furnished in 28 and 30 gage.

Adjustable. Has non-collapsible crimp end. All but 3-inch sizes are seamed at joints in 28-gage weight. Positively smokeless. Easily adjusted to any angle up to 90 degrees.

Made from Milcor blue sheets.

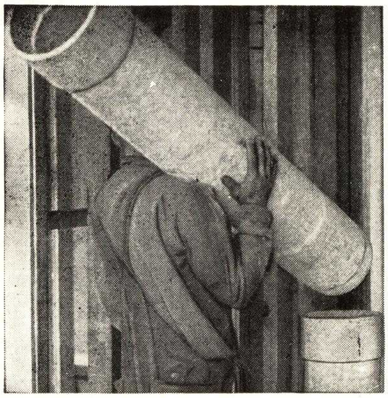
Has 2-inch ends. Furnished in 28 gage.

Weights per Dozen

Corrugated—Milcor Blue					
Size....................inches	3	4	5	6	7
28 Gage...............pounds	5½	9	12	16	21
30 Gage...............pounds	4½	7	10	13	17
Corrugated—Galvanized					
28 Gage...............pounds	6½	9	14	18	24
Adjustable—Milcor Blue					
28 Gage...............pounds	3¾	6½	8¾	11½	14½

J-M Transite Flue Pipe

For Venting Gas Burning Appliances



Will convey gases with temperatures as high as 550° F. without loss of efficiency or serviceability. Composed of asbestos and cement, bonded together under tremendous hydraulic pressure. Fireproof, weatherproof; cannot rust or warp. Will not discolor or stain adjoining parts of building. Gray-white; requires no painting but can be painted quickly and easily for decorative purposes.

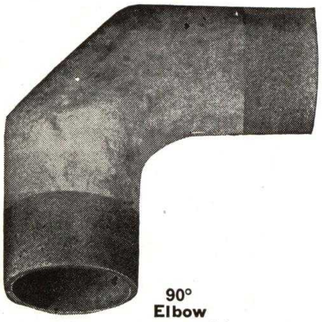
Round Pipe.—Fits over all standard round outlets of gas heaters; an adapter is used if the outlet is oval. Tapered couplings are used; for field cuts, duplex couplings are available. Furnished in sizes 2 to 7 inches inside diameter in lengths of 5 feet; sizes 8 to 12 inches in lengths of 6½ feet.

Oval Pipe.—Used where flue runs through an interior partition or exterior wall constructed of 4-inch studs. Joints formed with standard oval coupling. Outside narrow dimension of all oval pipe, 2¾ inches; of all oval couplings, 3⅝ inches.

Application.—Can be cut with a coarse tooth carpenter's saw. Field cuts should be square. No special tools required for any part of assembly. Portable tapering tools available where field tapering is resorted to. Readily installed. Easy to handle and support. Transite flue pipe cement is used to seal all joints, and is same color as the pipe.

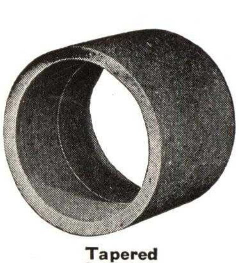
Round Transite Flue Pipe and Fittings

Short-Leg Tee



90° Elbow

45° Elbow



Tapered Coupling

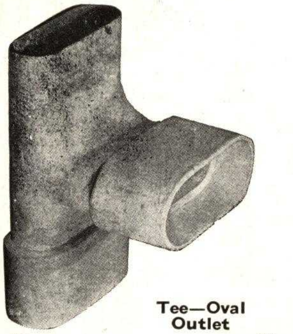
Pipe Size....inches	2	2½	3	3½	4	4½	5	6	7	8	10	12
Tapered Flue Pipe, with 1 Coup....per foot	$.25	$.30	$.35	$.425	$.50	$.575	$.65	$.775	$.925	$1.075	$1.425	$1.80
Pipe with Socket Joint....per foot	.41	.465	.52	.595	.675	.75	.83	.955	1.115	1.275	1.75	2.235
Short-Leg Tees, with 2 Coup....each	1.50	1.80	2.10	2.575	3.00	3.45	3.90	4.65	5.55	6.50	8.25	10.80
Long-Leg Tee, with 2 Coup....each	1.65	1.975	2.325	2.825	3.30	3.775	4.30	5.125	6.10	7.15	9.05	11.875
90° Elbow, with 1 Coup....each	1.40	1.675	1.95	2.375	2.80	3.225	3.65	4.35	5.20	6.00	8.00	10.10
30°, 45°, and 60° Elbows, with 1 Coup.. each	1.00	1.20	1.40	1.70	2.00	2.30	2.60	3.10	3.70	4.30	5.70	7.20
Tapered Coupling....each	.25	.30	.35	.425	.50	.575	.65	.775	.925	1.075	1.425	1.80
Duplex Coupling, No. 1 (Old Style)...each	.30	.375	.425	.525	.60	.70	.80	.925	1.125	1.30	1.725	2.175
Duplex Coupling, No. 2 (New Style)..each	.535	.58	.625	.75	.915	1.15	1.175	1.39	2.12	2.885	3.785	5.25
Lateral, with 2 Coup....each	1.60	1.925	2.25	2.725	3.20	3.675	4.175	4.95	5.925	6.90	9.125	11.50
End and Drip Caps....each	.50	.60	.70	.85	1.00	1.15	1.30	1.55	1.85	2.15	2.85	3.60
Ventilator Top....each	2.00	2.40	2.80	3.40	4.00	4.60	5.20	6.20	7.40	8.60	11.40	14.40
Cone Top....each	1.50	1.80	2.10	2.575	3.00	3.45	3.90	4.65	5.55	6.50	8.25	10.80

Reducers (not to exceed 2 inch reduction), 50 cents per inch of large diameter, e.g. 6 inch to 4 inch, $3.00

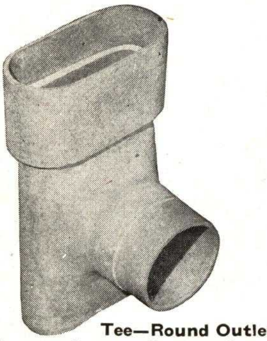
Approximate Quantity of Transite Flue Pipe Cement Required for 100 Joints, Pounds

	2	2½	3	3½	4	4½	5	6	7	8	10	12
Bell End, Duplex Coupling, No. 1....	40	45	53	59	76	85	92	105	152	172	210	300
Bell End, Duplex Coupling, No. 2....	48	55	64	72	91	100	109	127	183	205	252	350
One End Tapered Coupling....	6	7	9	10	13	14	15	18	27	30	37	49

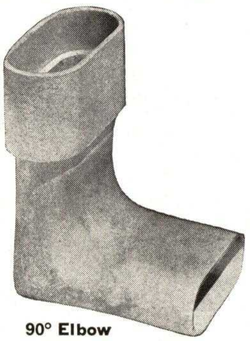
Oval Transite Flue Pipe and Fittings



Tee—Oval Outlet



Tee—Round Outlet



90° Elbow

90° Elbow—Flat Oval

Pipe....No.	3	4	5	6
Pipe Size....inches	2¼x4¼	2¼x6⅝	2¼x9¾	2¼x11¼
Pipe, with 1 Coup....per foot	$.35	$.50	$.65	$.775
*Tee, with 2 Coup....each	2.10	3.00	3.90	4.65
Flat Oval Tee, with 2 Coup..each	2.10	3.00	3.90	4.65
90° Elbow, with 1 Coup....each	1.95	2.80	3.65	4.35
Flat Oval 90° Elbow, 1 Coup..each	1.95	2.80	3.65	4.35
45° Elbow, with 1 Coup....each	1.40	2.00	2.60	3.10
Flat Oval 45° Elbow, 1 Coup.each	1.40	2.00	2.60	3.10

*Tees are supplied with either oval or round branch outlet.

Pipe Size....inches	2¼x4¼	2¼x6⅝	2¼x9¾	2¼x11¼
Ribbed Coupling....each	$.55	$.65	$.775	$1.00
†Adaptor, with 1 Coup....each	1.50	2.00	2.50	3.00
‡Reducer, with 1 Coup....each	1.50	2.00	2.50	3.00
End and Drip Caps....each	.70	1.00	1.30	1.55
Flat Oval Lateral, with 2 Coup.each	2.735	3.645	5.975	6.825

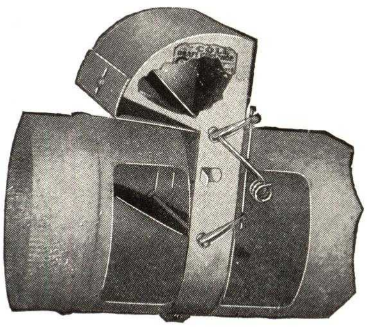
†Supplied with oval coupling unless tapered coupling is spec.
‡Price on basis of larger size.

Approx. qty. of Transite Flue Pipe Cement Required for 100 Joints, Lb.

	2¼x4¼	2¼x6⅝	2¼x9¾	2¼x11¼
One End Oval Coupling....	32	42	72	82

Cole Draft Governors

An accurately balanced governor. Balance is not affected by adjustment made at time of installation nor by soot, scale or fly ash.



Opening in top of pipe prevents dust or soot sifting through to floor.

Domestic

Size, In.	Each
7 & 8	$6.50
9	6.70
10	7.00
11 & 12	7.90

Commercial

Size, In.	Each
13 & 14	$21.40
15	22.90
16	24.60
17 & 18	26.10

Field Standard Type M Barometric Draft Controls

FIELD BAROMETRIC DRAFT CONTROL

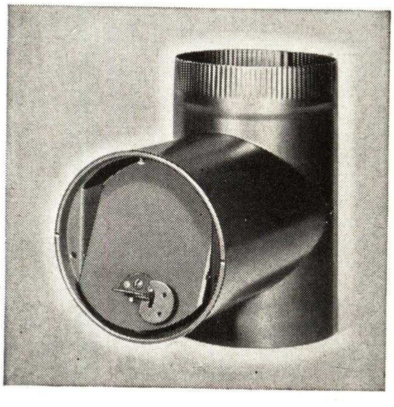
Ring and gate are painted steel; casing made of galvanized steel.

Designed to include the rocking chair action which eliminates friction at the gate bearing, so that instead of twisting in journals, the pin rolls in slots. This action increases sensitivity, as does the off-center mounting of the gate, to provide a greater effective area on which the draft can operate to prevent fouling of the control by soot. Gate does not swing into flow of gases. Casing has wings on either side within the housing, with the gate shaped to fit closely to these wings. Does not warp or clog. Has free smoke passage.

Size Control Inches	Each	Pipe Circumference Inches	Pipe Diam. Inches	Overall Length Collar Inches	Overall Clearance from Ctr. Pipe Inches	Shipping Weight Pounds
6	....	19	6	8	9⅝	2
7	....	22	7	9½	10⅞	2
8–9	....	22–28¼	7–9	11½	14¾	6½
10	....	31½	10	13	16½	11½
12	....	37¾	12	15	20	16½
15	....	47¼	15	19	25½	32½
18	....	56½	18	23	30¾	51
20	....	63	20	25	32¾	60
24	....	75½	24	30	41¼	108

On intermediate sizes of smoke pipe use next larger size.

Type RRA Field 6-Inch Draft Controls



For vertical or horizontal pipe installations on coal and oil burning heaters. Adjustable for low, medium or high draft.

Rigidly constructed from blue steel with 22-gage ring and 22-gage gate.

Packed 1 in carton complete with stub and tee.

Shipping weight, 3 pounds.

J-M Sectional Pipe Insulation

Per Linear Foot

These pipe insulations are supplied in sections three feet long, canvased and with bands.

Asbesto-Sponge Felted Insulation is made in thicknesses from 1 inch to 3 inches.

85% Magnesia is made in Standard (approximately 1-inch), 1½-inch, 2-inch, Double Standard, 2½-inch, and 3-inch (broken joint) thicknesses.

Pre-shrunk Asbestocel Insulation (4 plies per inch) is made in 2 to 8-ply thicknesses. Up to and including 4 ply, use prices for standard thicknesses; for greater thicknesses use respective thickness price.

Zero Insulation is made in one thickness only, approximately 1¼ inches. Use standard thickness prices.

Anti-Sweat Insulation is made in ½, ¾, 1, 1½ and 2-inch thicknesses. Use standard thickness prices for thicknesses 1-inch and under.

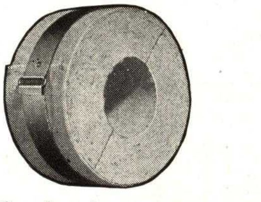
Supplied to fit standard pipe sizes and copper pipe and tubing nominal size ⅜ inch through 6 inches.

	Thickness					
Inside Diameter of Pipe Inches	Standard Per Linear Foot	1½-Inch Per Linear Foot	2-Inch Per Linear Foot	†Double Standard Per Linear Foot	2½-Inch Per Linear Foot	3-Inch Broken Joint Per Linear Foot
½	$.22	$.46	$.75	$.65	$1.00	$1.20
¾	.24	.49	.80	.70	1.05	1.35
1	.27	.52	.85	.75	1.10	1.40
1¼	.30	.56	.90	.80	1.15	1.45
1½	.33	.60	.95	.85	1.20	1.55
2	.36	.64	1.00	.90	1.25	1.65
2½	.40	.70	1.05	1.00	1.35	1.75
3	.45	.76	1.15	1.10	1.50	1.90
3½	.50	.82	1.25	1.20	1.65	2.05
4	.60	.88	1.35	1.40	1.80	2.20
4½	.65	.94	1.45	1.50	1.95	2.35
5	.70	1.00	1.55	1.60	2.10	2.50
6	.80	1.10	1.70	1.80	2.25	2.70
7	1.00	1.20	1.85	2.25	2.40	2.90
8	1.10	1.35	2.00	2.50	2.55	3.15
9	1.20	1.50	2.20	2.70	2.80	3.40
10	1.30	1.65	2.40	2.90	3.05	3.65
*12	1.85	1.85	2.70	4.10	3.40	4.10
14 O. D.	2.10	2.10	3.00	4.60	3.80	4.60
16 O. D.	2.35	2.35	3.30	5.10	4.20	5.10
18 O. D.	2.60	2.60	3.60	5.60	4.60	5.60
20 O. D.	2.85	2.85	4.00	6.00	5.00	6.00
24 O. D.	3.30	3.30	4.50	7.00	5.75	7.00
30 O. D.	4.00	4.00	5.50	8.40	6.95	8.40

*Sizes 12-inch and larger furnished in segmental form. 12-inch can be supplied in sectional type on special order. This applies to 85% Magnesia and Superex.

†Only 85% Magnesia made in this thickness.

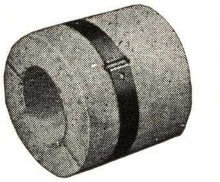
J-M Asbesto Sponge Felted Sectional Pipe Insulation



An efficient insulation for pipes conveying steam or fluid, at temperatures to 700°F. Made of layers of thin felt, composed of asbestos fiber, combined so as to give a spongy laminated material. Tough, flexible and durable.

Furnished in thicknesses from 1 inch to 3 inches, in 3-foot sections with canvas jacket and bands to fit standard pipe sizes. Also furnished in sheets and blocks for boilers, flues, and large regular surfaces.

J-M 85% Magnesia Sectional Pipe Insulation

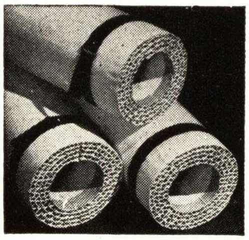


Under actual service conditions 85% magnesia has proved to be the most economical and efficient insulation of the molded type for temperatures to 600°F. This insulation has the maximum mechanical strength consistent with its high insulating efficiency.

Made in various thicknesses from standard (approximately 1-inch thick) to 3 inches, in 3-foot sections with canvas jacket and bands, to fit standard pipe sizes up to and including 10 inches in diameter. For larger sizes, curved segments or blocks are supplied.

Also furnished in blocks for covering boilers, boiler flues, and other large regular and irregular surfaces.

J-M Pre-Shrunk Asbestocel Sectional Pipe Insulation



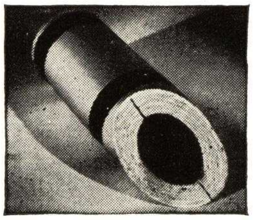
Cellular type of insulation for pipes carrying low pressure steam or hot water.

Made up of alternate layers of plain and corrugated, specially-treated, moisture-resistant, asbestos paper. Sections surfaced with asbestos paper for high speed work or with a canvas cover.

Furnished in 3-foot sections, in thicknesses of 2 to 8 plies, each ply approximately ¼ inch thick.

J-M Pre-Shrunk Wool Felt Sectional Pipe Insulation

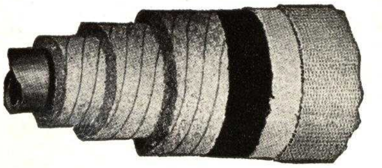
For Hot and Cold Water Service



Made of special indented wool felt by a process which increases efficiency and reduces weight. A dual-service liner of asphalt saturated felt. Furnished with canvas finish. Sections 3 feet long in thicknesses of ½, ¾, 1-inch, double ½ and double ¾ inch.

Prices on application.

J-M Built-Up Brine and Ammonia Insulation

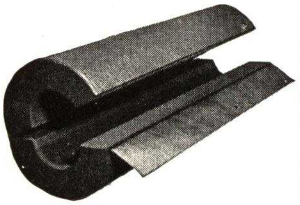


For maintaining the extremely low temperature required in pipe lines conveying brine or ammonia, or other cold liquids or gases. Consists of several layers of insulating felts applied around pipes to be insulated, which, with the method of sealing the surface makes it highly efficient as an insulator and capable of withstanding contraction and expansion without cracking or breaking.

Prices upon application.

J-M Rock Cork Pipe Insulation

For use on pipe lines carrying water, brine, ammonia and other refrigerated fluids.



Highly efficient and durable. Provides an unbroken, seamless sheath. Will not decay nor support the growth of bacteria or mold. Odorless and verminproof.

Made from mineral wool, which is bonded with a waterproof compound.

Furnished with factory-applied integral waterproof jacket, in single layer sections, 3 feet long, to fit standard pipe sizes. Protects both longitudinal joints, eliminating dependence upon seam filling compounds. Facilitates application as a complete section can be applied as a unit.

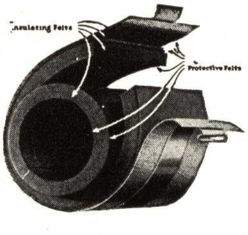
Ice water thickness is used for water, liquid ammonia and other cold lines between 30° and 45°F. Varies from 1.4 to 2 inches in thickness, according to pipe size. For pipe sizes of 12, 14 and 16 inches, the insulation is furnished in half-sections, 3-feet long.

Brine thickness is used for pipes conveying brine, ammonia and other cold lines operating between 0° to 30°F. Varies in thickness from 1.91 to 3.19 inches, according to pipe size. Furnished in half-sections, 3-feet long, for 10, 12 and 14 inch pipe.

Heavy brine thickness is used for pipes conveying brine, ammonia or other refrigerants operating at temperatures from 0° to -30°F. Varies from 2.82 to 4.18 inches in thickness, increasing with the pipe size. Furnished in half-sections, 3-feet long, for pipe sizes 8, 10 and 12 inches.

Temperatures below -30°F: Choice of proper thickness depends upon a number of varying factors. Recommendations will be made on application.

J-M Anti-Sweat Sectional Pipe Insulation



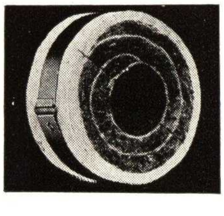
For insulating pipes conveying cold water or other cold liquids at temperatures above 32°F.

A combination of insulating felts that keep heat away from the pipe, and waterproofed felts that protect the insulating felts against the admission of moisture.

Anti-sweat insulation prevents condensation of moisture and dripping from pipes and keeps the contents of the pipes cool.

Furnished in thicknesses of ½ and ¾-inch solid construction, and in 1, 1½ and 2-inch broken joint construction, in 3-foot sections, to fit standard pipe sizes. Not furnished in sheet or block form.

J-M Zero Sectional Pipe Insulation



For insulating cold water pipes located where there is likelihood of the water in the pipes freezing, but where temperatures are moderate rather than extreme or where the length of time that the surrounding air would be below freezing-point is short. Constructed of layers of hair felt and alternate layers of wool felt with a lining of saturated wool felt inside.

For all pipe sizes from ½ inch up in one thickness only, approximately 1¼ inch, in 3-foot sections with canvas jacket and band s,to fit standard pipe sizes.

Also supplied in sections to fit straight runs of copper pipe or tubing of nominal diameters from ⅜ to 6 inches.

Banroc Mineral Wool

Loose

A lightweight, effective insulating material produced from high silica minerals.

Used as an insulating filler in hollow oven walls, fireless cookers, and for other purposes where a loose bulk insulation is required. May be packed to various densities, but 12 pounds per cubic foot is recommended.

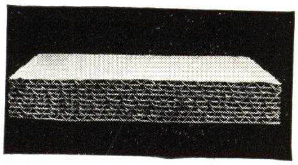
Put up in bags containing approximately 40 pounds.

Granulated

Made from regular Banroc Loose. Used primarily for hand packing and pouring. Loosely poured into position, 9 to 10 pounds per cubic foot, or hand packed to a density of 10 to 12 pounds per cubic foot. Shipment in bags containing approximately 40 pounds.

J-M Asbestocel Sheets and Blocks

For Temperatures to 300°F.

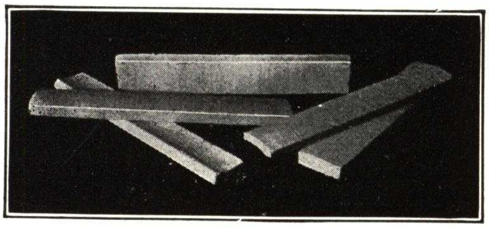


For insulating medium or low pressure boilers, feedwater heaters, dry rooms, warm air ducts and other surfaces whose temperatures are not extreme. Of alternate plain and corrugated asbestos felts, built up to the proper thickness.

Furnished in 4 plies per inch of thickness in sizes 6, 9, 12, 18 and 36 inches wide by 36 and 72 inches long, from ½ to 4 inches thick. Weight approximately 1 pound per square foot per inch of thickness.

Can also be furnished in 6 plies per inch of thickness, known as fine corrugated, in the same sizes as the coarse-corrugated material. Weight approximately 1.3 pounds per square foot per inch of thickness.

85% Magnesia Blocks

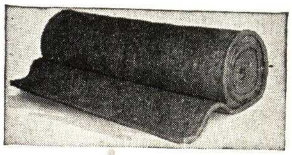


For covering boilers, breeching tanks and similar large surfaces. Sizes 6x36, 6x18 and 3x18, ⅞ to 4 inches thickness; 12x36, 1½ to 4.

Thick...in.	⅞	1	1⅛	1¼	1⅜	1½	1⅝	1¾	1⅞	2	2⅛
Per Sq. Ft.	$.30	.30	.34	.38	.42	.45	.49	.53	.57	.60	.64

Thick...in.	2¼	2⅜	2½	2⅝	2¾	2⅞	3	3¼	3½	4
Per Sq. Ft.	$.68	.72	.75	.79	.83	.87	.90	.98	1.05	1.20

Johns-Manville Standard Hair Felt Insulation



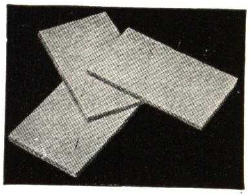
Made from 100% selected cattle hair by an improved felting process.

For refrigerator car insulation, and for insulation of fittings on cold water pipes. Furnished 6 feet wide by 50 feet long, 3 feet wide by 100 feet long, 3 feet wide by 50 feet long, and 9 feet wide by 50 feet long.

Thickness.......inches	¼	½	¾	1	1¼	1½	2
Wt. per Sq. Ft..ounces	4	6¼	8½	11	13½	16	21

Prices on application.

J-M Asbestos Sheet Mill Board



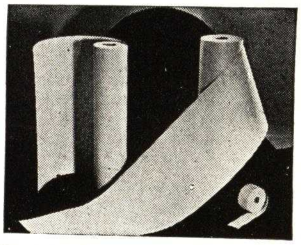
Recommended for general uses requiring sheet or board as a fireproof lining for floors, partitions, ceilings, elevator shafts, ranges, stoves, grates, etc.

Made in hard, medium and soft grades. Medium furnished unless otherwise specified.

Standard sheets 42x48 inches.

Thickness In.	Approx. Wt. Lb. per Sheet	Thickness In.	Approx. Wt. Lb. per Sheet	Thickness In.	Approx. Wt. Lb. per Sheet
1/32	2.5	⅛	9	⅜	25.2
3/64	3.5	5/32	11.3	½	31.5
1/16	4.6	3/16	13.3	⅝	42.9
5/64	6	¼	17.6	¾	46.6
3/32	7	5/16	21.4	..	....

J-M Asbestos Paper and Roll Board



A fire-resisting sheathing material extensively used for protection of wood partitions, walls, ceilings and in all kinds of building construction.

Rolls of asbestos paper, weighing 50 and 100 pounds, are regularly furnished in widths of 18, 24 and 36 to 37½ inches. Paper may also be ordered in other widths, in cut sheets or in 25-pound rolls. Furnished in thicknesses of .015 to 1/16 inch.

Asbestos roll board is similar to asbestos paper. It is furnished in standard rolls 18, 36 and 72 inches wide, weighing 50 and 100 pounds, also in special widths up to 36 inches or in sheets cut to required dimensions on order. Furnished in thicknesses 3/32 and ⅛ inch.

Thickness.in.	.015	.019	.022	.027	.029	.032	1/16	*3/32	*⅛
†Wt. per 100 Sq. Ft...lb.	6	8	10	12	14	16	32	48	64

*Tolerance required for roll board on both weight and thickness ± approximately 10 per cent.

†The actual weights may vary ± 10 per cent.

J-M Asbestos Paper Tape

Made from 12-pound asbestos paper and furnished in one thickness only—.027 inch.

J-M Asbestos Insulating Cement

For Temperatures to 1000°F.

No. 0352

Used by plumbing and steamfitting trade.

Covering capacity, applied and dried, 19 square feet, 1-inch thick, per 100 pounds.

No. 352. A general utility short fiber, quality cement. Packed in 50 and 100-pound bags.

No. 0352. An inexpensive cement. Packed in 100-pound bags.

No. 400 J-M Asbestos Insulating Cement

Smooth-finishing cement of good insulating value. Covering capacity, 25 square feet, 1 inch thick per bag.

Packed in 100-pound bags.

Prices upon application.

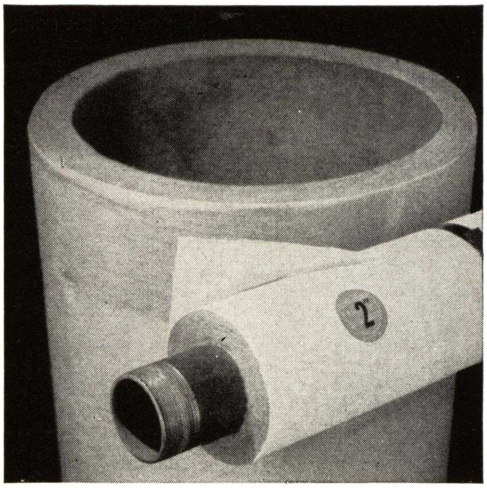
J-M 85% Magnesia Cement

Recommended in cases where a cement of high insulating value is desired, for temperatures not exceeding 600°F.

The 85% Magnesia cement is composed of approximately 85% carbonate of magnesia and 15 per cent asbestos fiber. It is exceptionally light, and has a large covering capacity.

Furnished in bags containing 60 pounds each. Has a covering capacity of approximately 35 square feet one inch thick, per bag.

Fiberglas PF Pipe Insulations



Made of Fiberglas insulating wool, bonded with an organic thermo-setting binder. It offers a convenient, efficient method of insulating steam and other pipes in all standard sizes up to 30 inches inclusive, for temperatures up to 600°F. For temperatures above 600°F. and up to 1100°F., it is used as the outer layer of insulation in combination with an inner layer of high temperature pipe covering. This arrangement combines the best qualities of both types, the refractory value of high temperature pipe covering and the mechanical strength, efficiency, and economy of Fiberglas. When pipe insulation sections are put together, the glass fibers tend to interlace forming a neat, tight joint which effectively resists the escape of heat.

Physical Characteristics

Has exceptionally low thermal conductivity with high resistance to heat transmission. Offers substantial elimination of heat loss through joints through tendency of fibers to knit together. Extremely low in moisture absorption.

Combines light weight for easy handling and application with ruggedness for durability.

Immune to rot and decay. Odorless and vermin resistant.

Types Available

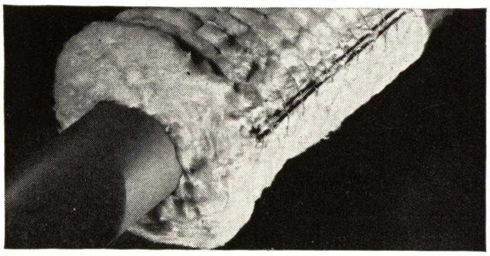
Type 60. For all general uses. It is covered with a 4-ounce canvas jacket, overlapped 2 inches for all nominal pipe sizes up to and including 12-inch diameter. Lacquered bands are furnished with each section. Canvas covering for larger size products is furnished at nominal cost when specified. Heavier weight canvas 6 or 8 ounces also available on request.

Type 60-U. Used in locations where the insulation might be subjected to occasional wetting. It is identical with Type 60, except that in place of the canvas covering, it has 35-pound roofing felt jacket cut to size and attached to the pipe covering at the factory.

Made in sections or segments 3 feet long for all standard pipe sizes. Is also made in hemi-cylinders. Pipe sizes 12 inches and smaller are insulated with covers in two parts, each a hemi-cylinder. For sizes larger than 12 inches, either 3 or 4 segments are employed.

Pipe Size Inches	Per Lineal Foot	Wall Thickness Inches	Pipe Size Inches	Per Lineal Foot	Wall Thickness Inches
½	$.22	⅞	10	$1.30	1¼
¾	.24	⅞	12	1.85	1½
1	.27	⅞	14	2.10	1½
1¼	.30	⅞	15	2.25	1½
1½	.33	⅞	16	2.35	1½
2	.36	1 1/32	17	2.50	1½
2½	.40	1 1/32	18	2.60	1½
3	.45	1 1/32	19	2.75	1½
3½	.50	1 1/32	20	2.85	1½
4	.60	1⅛	21	3.00	1½
4½	.65	1⅛	24	3.30	1½
5	.70	1⅛	27	3.65	1½
6	.80	1⅛	28	3.75	1½
8	1.10	1¼	30	4.00	1½

Fiberglas Blanket Type Pipe Insulation



Made of Fiberglas insulating wool, faced on one side with a straight line wire mesh stitched to the wool by means of asbestos yarn ties and cut to the circumference of the desired pipe size. For indoor or outdoor use.

Designed for insulating pipes at temperatures up to 1000°F. in all sizes from 3 inches in diameter and up. Particularly recommended for use on pipe sizes of 12 inches diameter and greater. Suited for spiral riveted, or spiral welded pipes which do not follow the standard dimensions of o.d. or i.d. as used in lap welded pipe or seamless tubing. In the case of the spiral riveted pipe, molded sectional covering would not fit snugly, as the protruding rivets, or lap joint, presents an irregular surface.

Per Lineal Foot

Fiberglas is chemically stable, and will resist repeated wetting and drying, and changes in temperature. Should this pipe insulation become wet it will dry out rapidly when vented to drier air.

The light weight of this insulation, approximately 7 pounds per cubic foot, makes it easy to handle, especially when large sizes are involved, or when working from ladders or scaffolding.

Application is accomplished by the simple operation of wrapping the blanket and lacing or tying the edges together with galvanized wire, keeping the longitudinal joint along the bottom of the pipe or as close thereto as practical application permits. When properly applied, the insulation will be uniform in thickness and density.

A special puller is available to aid in the application of the insulation.

Standard sections are two feet long, measured on the wire, ideal for easy handling and quick application. The insulating wool is actually made 26 inches long, allowing an extra inch at each end to knit with the wool of the adjacent pipe covering to form a completely intermeshed, heat-tight joint. When each section is closed by lacing together the selvage edges, a smooth, tight, concentric insulation results.

*Pipe Size Inches		Thickness of Insulation, Inches					
Nom.	Actual O.D.	1	1½	2	2½	3	4
3	3.500	$.85	$1.10	$1.50	$1.85	$2.45	$3.40
3½	4.000	.95	1.20	1.60	1.95	2.60	3.55
4	4.500	1.05	1.30	1.70	2.05	2.75	3.70
4½	5.000	1.15	1.40	1.85	2.20	2.90	3.85
5	5.563	1.25	1.50	2.00	2.35	3.05	4.00
6	6.625	1.35	1.65	2.15	2.50	3.30	4.20
7	7.625	1.50	1.80	2.30	2.70	3.55	4.50
8	8.625	1.65	1.95	2.50	2.95	3.80	4.80
9	9.625	1.80	2.15	2.75	3.20	4.10	5.10
10	10.750	2.00	2.35	3.00	3.50	4.40	5.50
12	12.750	2.20	2.70	3.30	3.80	4.80	6.00
14	14.000	2.50	3.00	3.60	4.20	5.30	6.50
16	16.000	2.80	3.30	4.00	4.60	5.80	7.10
18	18.000	3.10	3.60	4.40	5.00	6.30	7.60
20	20.000	3.40	3.90	4.80	5.50	6.90	8.20
22	22.000	3.70	4.25	5.20	5.95	7.40	8.85
24	24.000	4.00	4.60	5.60	6.40	7.90	9.50
26	26.000	4.30	4.90	6.00	6.90	8.40	10.10
28	28.000	4.60	5.25	6.40	7.40	8.90	10.70
30	30.000	5.00	5.60	6.80	7.85	9.40	11.20
32	32.000	5.30	6.00	7.20	8.35	9.90	11.80
34	34.000	5.60	6.35	7.60	8.80	10.40	12.40
36	36.000	5.90	6.70	8.00	9.30	10.90	13.00
38	38.000	6.20	7.05	8.40	9.80	11.40	13.60
40	40.000	6.50	7.40	8.80	10.30	11.90	14.20
42	42.000	6.80	7.75	9.20	10.80	12.40	14.80

*For prices on intermediate pipe sizes or thicknesses use price of next larger pipe size or thickness.

J-M Standard Firecrete Cement

Johns-Manville
STANDARD
FIRECRETE
A MONOLITHIC
REFRACTORY
KEEP DRY
Johns-Manville

A dry, hydraulic-setting refractory cement used for monolithic construction. Can be handled like a concrete mixture. Adaptable for a wide range of industrial applications, especially pouring or casting special shapes, door linings, and pipe or flue linings.

Temperature resistance: highest working temperature, 2400°F.; pyrometric cone equivalent 15–16, 2600°F. Percent linear shrinkage: oven-dried to 1750°F., .0%; to 2250°F., .5%.

Material is graduated and calcined and will pass a 6-mesh screen. Because of its texture, it should not be applied less than 1½ inches thick. Each cubic foot of construction requires 110 pounds.

For pouring or casting, add 10 quarts of water per 100 pounds of cement; for tamped or rammed linings, 8 quarts.

100-Pound Bag .... each .....

J-M Hellite Refractory Cement

A general purpose, air-setting, ready-mixed cement for setting fire brick with either thin or heavy joints, for wash-coating and especially for shallow patching, either hot or cold. Recommended for temperatures up to 3000°F.

Readily workable, has excellent adherence and minimum drying and firing shrinkage. Supplied in proper consistency for use with paddle or trowel, but may be thinned with water for thin mortar joints and for gun or brush coatings.

10-Pound Cans	each	.....
25-Pound Pails	each	.....
50-Pound Pails	each	.....
100-Pound Pails	each	.....
250-Pound Drums	each	.....
500-Pound Drums	each	.....
850-Pound Drums	each	.....

J-M Fireite Asbestos Furnace Cement

Net weight 5 Pounds
JM
Prepared ready for use
Johns-Manville
FIREITE
ASBESTOS FURNACE
CEMENT
Johns-Manville
Offices in all large cities

An asbestos compound that meets every requirement for mounting and repairing heating equipment.

Used wherever there is a joint to be sealed or a bond to be made. Recommended for setting ash pits, fire pots, doors and dampers, and for all other joints in boilers, stoves, heaters, ranges and furnaces.

Sets equally well under atmospheric conditions or under heat into a practically indestructible joint that is tight against smoke, soot, gas and air. Adheres readily to castings, and sheet metal, making a permanent seal that cannot be broken.

Even under the highest service temperature, and the strain of constant expansion and contraction, it resists shrinkage, and does not crack, crumble or bloat. Also for bonding refractory shapes in stoves, heaters, etc.

On installations of oil burners and automatically stoked equipment, where complete combustion must be maintained at all times, the use of Fireite for sealing clean-out doors and flue pipes is an important safeguard against service calls. May also be used for bonding refractory hearth tile in rotary burners.

Size Can ... pounds	1	2	3	5	10
Each	..	..	..	..	..
No. in Carton	50	25	18	12	6

Also available in 25, 50, 100, 250, 500 and 850-pound individual containers.

Ironset Furnace and Retort Cement

IRONSET
ASBESTOS
FURNACE & RETORT CEMENT
FIRELINE STOVE & FURNACE LINING CO.

An asbestos cement of highest quality for packing and sealing joints when mounting castings for stoves, ranges, furnaces, heaters, etc. For setting and pointing up fire brick and fire tile. Ideal for cementing around smoke pipes.

Withstands higher temperatures; will not crack, shrink, bloat, or blister. Remains elastic, forming a permanent gas-tight seal. Can be used on warm or cold metal. Hardens quickly and adheres firmly to the metal.

5-Lb. Can, Case of 12	per case	**$9.00**
10-Lb. Can, Case of 6	per case	**8.40**
50-Lb. Drums	each	**6.00**
100-Lb. Drums	each	**11.00**

Fireline Stove and Furnace Lining

FIRELINE
STOVE & FURNACE LINING
FIRELINE STOVE & FURNACE LINING CO.

Highest-quality refractory moulding material in moist, plastic form. Ready for use without mixing. Do not confuse with ordinary fire clay or dry stove lining mixtures.

For lining firepots of warm-air furnaces and heating stoves. Forms a modern refractory lining entirely around fire-pot, sealing all cracks and holes in old firepot castings—preserving new castings. Saves fuel, increases heat, reduces dirt and soot. Easily installed; moulded into place like modelling clay, then baked out by fire. Average 22–24 in furnace requires 100 lb. Chart furnished covering all furnace sizes. Ideal for setting stokers and for oil burner combustion chambers.

Also used for replacing cracked and burned-out fire box castings or fire tile linings in cook stoves, ranges, water heaters, garbage burners, etc. For replacing and repairing fire tile in steel furnaces. Fits all styles, sizes and models.

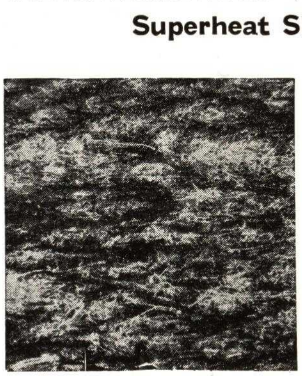
5-Lb. Can, Case of 12	per case	**$7.20**
10-Lb. Can, Case of 6	per case	**6.00**
50-Lb. Drums	each	**4.00**
100-Lb. Drums	each	**7.50**

No. 95 Low Pressure Rubber Diaphragms

Diaphragm is reinforced with cotton fabric.

Size ... inches	6	7	8	9	10	12
No. 95 ... each	**$.50**	**.55**	**.62**	**.68**	**.85**	**1.12**

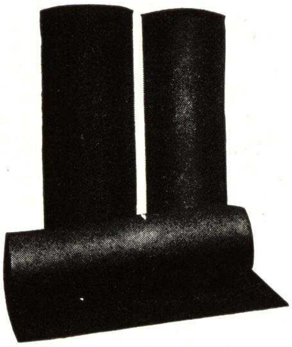
Superheat Sheet Packing



Unexcelled as a flange packing for all purposes where superheated steam is used. Not affected by the highest pressure or temperature, and will not melt, shrink or burn away in the joint. Will resist the action of gas, oils, ammonia or alkalies.

Furnished in 1/32 and 1/16-inch thicknesses.

Price .... per pound ....



Red Sheet Packing

Will pack an air, steam, hot or cold water joint equally well. It is a non-conductor. Particularly adapted to packing expansion or steam joints, as it does not burn or char.

Joints should be faced with plumbago, lamp black or chalk.

Thickness.......inch	1/32	1/16	3/32	1/8	3/16	1/4
Per Pound...........	.....	.....	.....	.....	.....	.....
Wt. per Sq. Yd....lb.	3 1/8	6 1/2	9 3/8	12 5/8	17 1/8	21 5/8

Red and Black Asbestos Wire Inserted Sheet Packing

Red and black sheet packing is a high pressure asbestos sheet packing, graphited on one side, and painted red on the other.

Commonly used in places where it is sometimes desirable to break a joint without removing the gasket and in the automobile industry. It is graphited to prevent the gasket from following the flange when moved.

Made in 1/16 and 1/8-inch thickness.

Prices upon application.

Asbestos Valve Stem Packing

Each strand is treated separately before twisting insuring a thorough lubrication.

Sizes 1/16, 1/8, 3/64, 1/4, 5/16 and 3/8-inch on spools of 1 pound each; 3/8, 1/4, 5/8-in. on 5 or 10-pound spools.

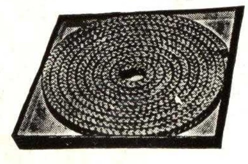
Per Pound...

Square Flax Packing

For hydraulic purposes, ends of pumps, elevator rods and cylinders, presses, accumulators, oil and brine pumps, etc.

1/4 to 1 1/2 Inches..........................per pound ....

Square Flax Packing



Made of pure, long fibre flax, possessing great strength. Contains pure lubricants and is without hemp, jute, tow or any gritty substances.

Sizes, 1/4 to 3 inches.

Per Pound.......................... ....

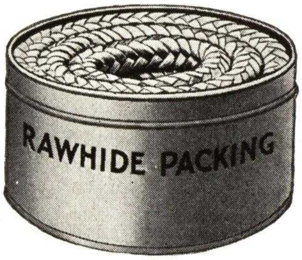
Square Hydraulic Packing

For hot and cold water service.

Made of special closely woven duck, with a high grade rubber friction. The duck is laid diagonally instead of at right angles.

Per Pound............ ....

Rawhide Packing



Rawhide packing will not cut rods, cylinders, or plungers because of nature of material of which it is composed, namely, a specially prepared rawhide, which is self-lubricating and practically anti-frictional.

Size, 1/4 to 2-inch.........................per pound ....

Asbestos Wick

Standard asbestos wick is long fibered, hard twisted for wire wiping and stem packing.

Furnished in 1/2 and 1-pound balls.

Candle Wick

For packing small valve stems, etc. Made of cotton. Furnished in 2-ounce balls.

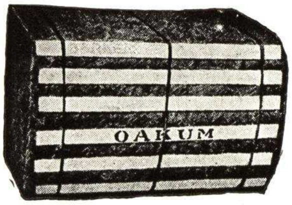
Per Pound.. **$1.60**

Rope Oakum

Made entirely of jute; comes in the form of a rope, about 1 1/2 inches in diameter, wound in coils of about 50 pounds each.

Untarred (illustrated) is used for caulking of water supply pipes. Tarred is used for all other kinds of pipe caulking.

Per Pound................ ....



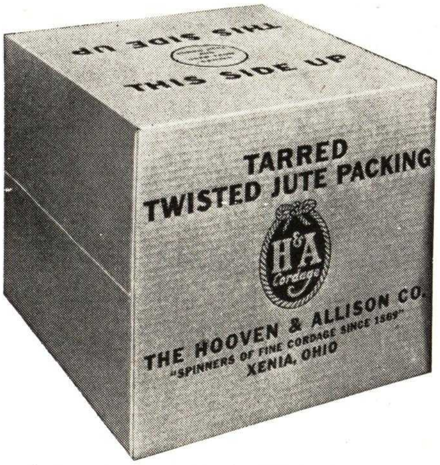
Plumbers' Spun Oakum

For caulking soil pipe.

Made of jute, jute waste and carded jute bagging, and contains a large percentage of tar.

Available in 5-pound balls or 50-pound bales.

H & A Tarred Twisted Jute Packing



Made entirely of jute and is tarred. Used for caulking lead, soil and iron pipe.

Diameter, approximately 1½ inches; 8 strand.

Packed in 50 Pound Cartons................per pound ....

H & A Untarred Twisted Jute Packing

Made of jute and is untarred, but slightly oiled. Used for caulking water supply pipes.

Diameter, approximately 1½ inches; 8 strand.

Packed in 50 Pound Cartons................per pound ....

H & A Unoiled (Dry) Twisted Jute Packing

Made entirely of jute and is the same as untarred packing except that it is dry, having no oil whatever. Used in connection with substitutes for lead.

Diameter, approximately 1½ inches; 8 strand.

Packed in 50 Pound Cartons................per pound ...

H & A E-Z Pack Jute Packing

Twisted

Single strand form, pure jute, supplied tarred, untarred and dry unoiled. Put up in 5 pound boxes; ten boxes to a 50-pound carton.

Per Pound.. ......

H & A Square Dry Braided Jute Packing

Used for caulking joints in bell and spigot cast iron pipe where lead substitutes are used as caulking compound.

Packing is full size, square and firm permitting tight evenly set joints ready for the metal.

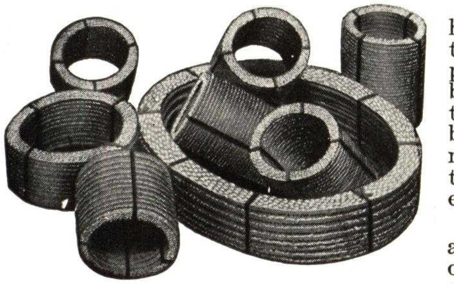
Available in ⅜, ½, ⅝ and ¾-inch diameters.

Put up in 50 pound coils packed in cartons.

Prices on application.

Asbestos Folded Gaskets

For Manholes, Handholes and Flange Joints

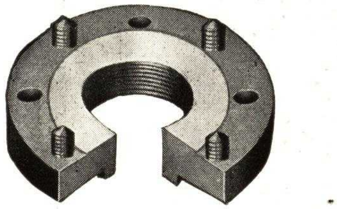


Will stand high temperatures and steam pressures. May be reused many times. Folded by hand and made of asbestos wire inserted sheeting.

Furnished in any size, shape or thickness. In ordering, give inside diameters and width of flange.

Per Pound.. ....

Ring Gaskets



Ring gaskets cover the face of the inside edge of the bolts and will always be furnished unless otherwise specified.

Canvas gaskets are furnished without any coating. It is recommended that they be coated with thread lubricant or with red lead and oil when installed.

Corrugated copper gaskets are recommended only when used with smooth faced flanges and should be coated with thread lubricant when installed.

For 125-Pound Cast Iron Flanged Joints

Size In.	1/16-Inch Cloth Inserted Rubber Each	1/16-Inch Rubber Each	4-Ounce Canvas Each	1/16-Inch Oil Resisting Each	Inside and Outside Diameter Inches
1	$.05	$.09	$.04	$.55	1 x 2⅝
1¼	.07	.13	.06	.85	1¼x 3
1½	.07	.13	.06	.90	1½x 3⅜
2	.07	.17	.06	1.35	2 x 4⅛
2½	.09	.21	.07	1.90	2½x 4⅞
3	.12	.25	.09	2.40	3 x 5⅜
3½	.14	.35	.10	3.50	3½x 6⅜
4	.16	.39	.11	4.25	4 x 6⅞
5	.19	.50	.13	5.25	5 x 7¾
6	.23	.59	.15	6.50	6 x 8¾
8	.30	.75	.18	8.75	8 x11
10	.42	1.00	.25	12.00	10 x13⅜
12	.58	1.25	.35	15.75	12 x16⅛
14	.70	1.56	.42	.....	14 x17¾
16	.82	2.00	.49	.....	16 x20¼
18	.86	2.30	.52	.....	18 x21⅝
20	1.02	2.50	.61	.....	20 x23⅞
24	1.40	2.90	.85	.....	24 x28¼
30	2.10	4.40	1.27	.....	30 x34¾
36	2.90	6.80	1.75	.....	36 x41¼
42	3.50	8.05	2.10	.....	42 x48
48	....	9.40	2.75	.....	48 x54½

For 175-Pound or 250-Pound Cast Iron Flanged Joints

	Rubber & Asbestos			27-Gage Corrugated Copper	
Size In.	1/16-Inch Rubber Each	Asbestos Each	I.D. and O.D. Inches	Each	I.D. and O.D. Inches
1	$.17	$.15	1 x 2⅞	$.16	1½x 2⅞
1¼	.17	.18	1¼x 3¼	.17	1⅞x 3¼
1½	.17	.22	1½x 3¾	.18	2⅛x 3¾
2	.19	.24	2 x 4⅜	.20	2⅞x 4⅜
2½	.25	.31	2½x 5⅛	.29	3⅜x 5⅛
3	.32	.42	3 x 5⅞	.40	4¼x 5⅞
3½	.35	.48	3½x 6½	.42	4¾x 6½
4	.38	.57	4 x 7⅛	.45	5 3/16x 7⅛
5	.52	.75	5 x 8½	.60	6 5/16x 8½
6	.63	.98	6 x 9⅞	.84	7½x 9⅞
8	.90	1.30	8 x12⅛	1.04	9⅜x12⅛
10	1.15	1.65	10 x14¼	1.45	11¼x14¼
12	1.50	2.00	12 x16⅝	1.88	13½x16⅝
14	2.10	3.30	13¼x19⅛	1.94	14¾x19⅛
16	2.50	3.70	15¼x21¼	2.88	16¾x21¼
18	2.85	4.15	17 x23½	2.96	19¼x23½
20	3.05	4.85	19 x25¾	3.54	21 x25¾
24	4.00	6.30	23 x30½	4.88	25½x30½

Series 420 McDonald Automatic Electric Shallow Well Pumps

***For Total Suction Lift Not Exceeding 25 Feet**

For 20 to 40 Pound Pressures

Capacitor Type Motor—110-220 Volts, 60 Cy., Single Phase

Nos. 420-3 and 420-4

Used for direct pumping or in connection with pneumatic storage tanks. Can be supplied for operation in conjunction with float control to maintain water level in open storage tanks.

Adapted to any source of supply—well, cistern, lake or stream—the only requirement being that the supply is within specified suction limits.

Smaller sizes are recommended for supplying water to homes, stores, filling stations, etc.

Larger units are recommended where greater quantities of water are required, such as tourist camps, group cottages, or where lawn sprinkling is desired in addition to general domestic requirements.

Features deep, heavy brass dual stuffing boxes, spring loaded to maintain constant pressure on both the water and power end packing. The power end becomes a sealed oil reservoir, assuring full automatic lubrication and complete protection against dirt or water entering the crank case.

Valve seats are chromium plated bronze. Live rubber valves, quick acting and silent, are accessible by removing one bolt without disturbing either suction or discharge piping.

Monel metal piston rod eliminates corrosion and pitting.

Connecting rod is of wear resisting bronze fitted with hardened and ground steel pin.

By reversing suction and discharge valves in the water box, suction may be reversed to meet any installation condition.

Equipped with Underwriters' approved control switch, two-pole type, totally enclosed.

Outfit includes pump, Underwriters' approved motor and pressure switch with overload protective relay built in, and brass water relief valve. Overload protection furnished in either motor or control switch, whichever permits more efficient service.

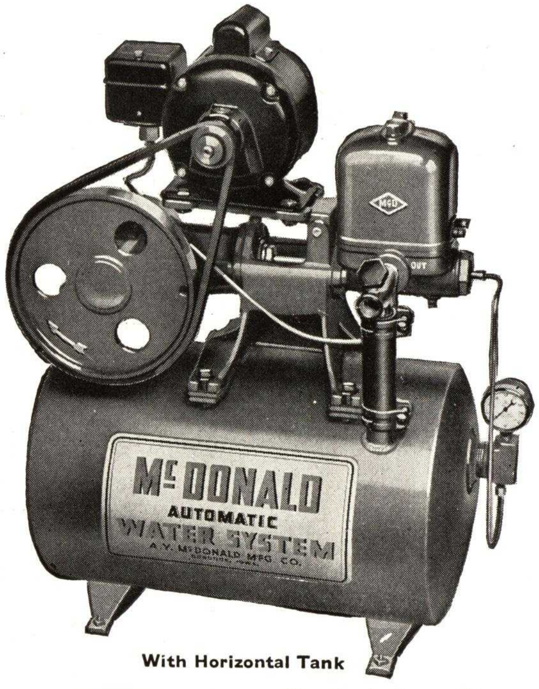
	Capacity, Gallons Per Hour			
	250	**350**	**500**	**650**
No.	**420–1**	**420–2**	**420–3**	**420–4**
Motor hp.	1/6	1/4	1/3	1/2
Size Suction inches	3/4	1	1 1/4	1 1/4
Size Discharge inches	3/4	3/4	1 1/4	1 1/4
Overall Width inches	9 1/4	10	12 3/8	12 3/4
Overall Height inches	16 3/4	16 3/4	21 3/8	22 5/8
Overall Length inches	22 1/2	22 1/2	28 1/4	28 1/4
Approx. Ship. Weight lb.	85	95	150	165

*Includes all frictional losses.

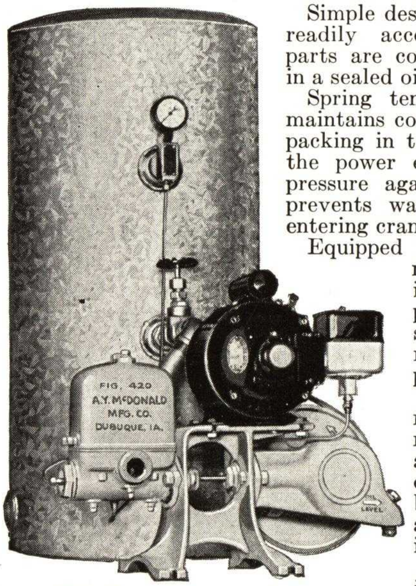
Series 420 Shallow Well Water Systems

***For Total Suction Lift Not Exceeding 25 Feet**

Pressure, 20-40 Pounds



With Horizontal Tank



With Vertical Pneumatic Tank

Simple design. All parts are readily accessible. Working parts are completely enclosed in a sealed oil bath.

Spring tension stuffing box maintains constant pressure on packing in the water end. In the power end, it maintains pressure against packing and prevents water or dirt from entering crankcase.

Equipped with a capacitor motor. No radio interference. Two pole pressure switch has thermal relay for motor protection.

Valve positions may be reversed, making suction available from either side of water box. Valve decks are bronze, chromium plated.

Pump is finished in heather green enamel.

With Horizontal Tank

No.	Max. Press. Lb.	Pump Cap. Gal.	Tank Cap. Gal.	Size Suc. In.	Size Disch. In.	Motor Hp.	Width In.	Ht. In.	Lgth. In.	Wt. Lb.
250–M–10	40	250	10	3/4	3/4	1/6	12	30 1/4	25	115
250–M–25	40	250	25	3/4	3/4	1/6	17	33 1/4	31 1/2	190
350–M–25	40	350	25	1	3/4	1/4	17	33 1/4	31 1/2	195

With Vertical Pneumatic Tank

No.	Max. Press. Lb.	Pump Cap. Gal.	Tank Cap. Gal.	Size Suc. In.	Size Disch. In.	Motor Hp.	Width In.	Ht. In.	Lgth. In.	Wt. Lb.
420–142	40	250	42	3/4	3/4	1/6	34	50	22 1/2	190
420–180	40	250	80	3/4	3/4	1/6	34	62	22 1/2	250
420–242	40	350	42	1	3/4	1/4	34	50	22 1/2	200
420–280	40	350	80	1	3/4	1/4	34	62	22 1/2	260
420–342	40	500	42	1 1/4	1 1/4	1/3	36	50	28 1/2	260
420–380	40	500	80	1 1/4	1 1/4	1/3	38	62	28 1/2	320
420–442	40	650	42	1 1/4	1 1/4	1/2	36	50	28 1/2	285
420–480	40	650	80	1 1/4	1 1/4	1/2	38	62	28 1/2	335

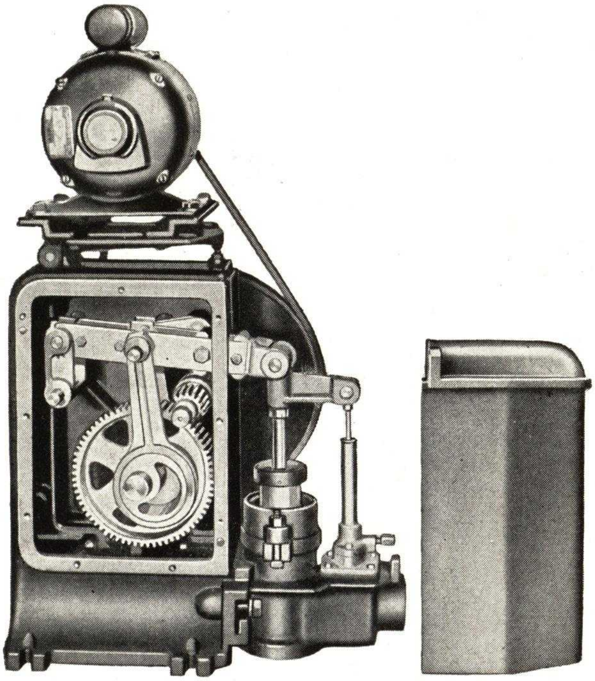
*Total suction lift includes all frictional losses.

Prices upon Request

McDonald Deep Well Pumps

Series 400 and 600

For Raising Water from a Depth Greater than 25 Feet



Specifications

Main Housing

Extremely heavy and generously oversized for severe service. Internal mechanism; discharge chamber and air compressor fully closed.

Unit Construction

The complete power mechanism is removable from the main housing without disturbing the motor, wiring or piping, making the deep well pump easily accessible for inspection or service.

Dual working parts centrally located for balance, thus eliminating side thrust and insuring perfect alignment, minimum wear, quiet and efficient operation for years of trouble free service.

Bearings

Exceptionally large for low bearing pressures, with bronze removable bushings on revolving shafts.

Gears

All gears are close grain cast iron accurately machine cut.

Pinion

High carbon steel. Finished from solid billet and integral with pinion shaft.

Positive Oiling

Force feed to all moving parts which are not actually submerged in oil. This system provides a copious oil supply without resorting to a single extra moving or wearing part.

Power

Whether electric motor or gas engine driven, only the best power equipment has been adopted as standard.

Controls

All electric controls are Underwriters' approved and of the highest quality procurable.

Belt Drive

Multiple V-belt drive from motor sheave to flat face—safety pulley on pump. Maximum belt durability. Conservative.

Differential Cylinder and Air Pump Assembly

Removable type differential cylinder of large proportions for equalizing load. Will pass the largest plunger that can be removed through standard drop pipe. Designed to prevent water entering the main housing.

The air pump is positive in operation and so designed as to pump air for the full length of its stroke. Floating drive, self-adjusting.

Stuffing Box Discharge Head and Air Pump Assembly

Used in lieu of differential cylinder for pumping wells equipped with double acting cylinder.

Appearance

Strictly modern without penalty to ruggedness. Finished in heather green enamel.

Complete

Pumps are rigidly tested and shipped complete as illustrated.

We reserve the right to furnish overload protection in either the motor or control switch whichever permits us to render you and your customer the most efficient service.

Series 400 McDonald 4-Inch Electric Deep Well Pumps

For Open Tank Service

For Raising Water from a Depth Greater than 25 Feet

Main housing is built for severe service. Internal mechanism, discharge chamber, and air compressor fully enclosed and weatherproof.

Discharge chamber is entirely independent of main housing to permit easy installation and alignment.

Provided with built in check valve to simplify discharge piping. Securely bolted to main housing after drop pipe, cylinder, and sucker rod are placed in position. Complete power mechanism is removable without disturbing parts. Dual working parts centrally located for balance.

Bearings are large for low bearing pressures, with naval bronze removable bushings on revolving shafts. All gears close grain cast iron, accurately cut. High carbon steel pinion, finished from solid billet and integral with pinion shaft.

Positive oiling, force feed to all moving parts which are not actually submerged in oil. Provides a copious oil supply without resorting to a single extra moving or wearing part. All electric controls are Underwriters' Approved.

Multiple V-belt drive from motor sheave to flat face, safety pulley on pump.

Removable type differential cylinder, large proportions to equalize motor load. Will pass largest plunger that can be removed through standard drop pipe. Designed to prevent water entering main housing.

Positive air compressor, designed to pump air full length of its stroke.

Finished in heather green enamel.

Cap. Gal. per Hr.	Diam. Cyl. In.	Max. Lift in Feet From Cyl. to Ground Level at Weel ⅓ Hp	½ Hp.	¾ Hp.	Size Drop Pipe In.	Size Wood Rod In.	Size Well Casing In.	Type Cylinder Recommended
160	1 13/16	165	255	‡350	2	**⅜	2	No. 450 Eureka
170	1⅞	165	255	‡350	2	1⅛	3	Nos. 454-500SS
250	2¼	105	165	245	2½	1⅛	3½	Nos. 454-500SS
245	2¼	105	165	245	2½	**⅜	2½	No. 450 Eureka
***345**	2¾	35	105	165	3	1⅛	4½	Nos. 454-500SS
***515**	3¼	...	35	110	3½	1⅜	5	Nos. 454-500SS
†195	2	135	205	300	‖	‖	4	††
†305	2½	60	130	205	‖	‖	4½	††
†440	3	...	65	135	‖	‖	5	††

*Plunger cannot be pulled through discharge head of pump.

†Capacities when used with closed type cylinder.

‡Maximum depth for which pump is recommended.

‖Closed type cylinders tapped 1¼ inches. Use ⅜-inch pipe or 7/16-inch rod. If 1⅛-inch wood rod is used specify cylinder tapped 1½ inches.

**Pipe.

††Use closed type cylinder No. 111SS for settings up to 135 feet; No. 136-3 for settings over 135 feet.

If open tank is above pump, deduct elevation of tank from above figures for cylinder setting.

Motor Units Only

Outfit includes pump with pressure cylinder, multiple V-belt drive and standard 60-cycle, 110-220-volt, single-phase capacitor motor. No tank, piping, motor control switch, well cylinder, pump rod, or drop pipe included.

Stroke, 4 inches. Strokes per minute, 60. Two drive belts. Piston rod: diameter, ⅝-inch; threads per inch, 12. Drop pipe tap, 2½ inches. Discharge pipe tap, 1¼ inches. Standard pressure cylinder, 2 inches.

No.	**403**	**405**	**407**
Horsepower	⅓	½	¾
Approximate Shipping Weight...pounds	240	260	270

Series 600 McDonald 6-Inch Electric Deep Well Pumps

For Open Tank Service with Tank at Pump Level

For Raising Water from a Depth Greater than 25 Feet

Internal mechanism, discharge chamber, and air compressor fully enclosed and weatherproof.

Discharge chamber is entirely independent of main housing to permit easy installation and alignment.

Provided with built in check valve to simplify discharge piping. Securely bolted to main housing after drop pipe, cylinder, and sucker rod are placed in position. Complete power mechanism is removable without disturbing parts.

Bearings are large for low bearing pressures, with naval bronze removable bushings on revolving shafts. All gears are accurately cut. High carbon steel pinion, finished from solid billet and integral with pinion shaft.

Positive oiling, force feed to all moving parts which are not actually submerged in oil. Provides a copious oil supply without resorting to a single extra moving or wearing part. All electric controls are Underwriters' Approved.

Multiple V-belt drive from motor sheave to flat face, safety pulley on pump.

Removable type differential cylinder, large proportions to equalize motor load. Will pass largest plunger that can be removed through standard drop pipe. Designed to prevent water from entering main housing.

Positive air compressor, designed to pump air full length of its stroke. Finished in heather green enamel.

Cap. Gal. per Hr.	Diam. Cyl. In.	Max. Lift in Feet From Cyl. to Ground Level at Well ½ Hp.	¾ Hp.	1 Hp.	1½ Hp.	Size Drop Pipe In.	Size Wood Rod In.	Size Well Casing In.	Type Cylinder Recommended
200	1 13/16	195	290	‡350	...	2	**⅜	2	No. 450 Eureka
215	1⅞	195	290	‡350	...	2	1⅛	3	No. 454-500SS
315	2¼	125	190	255	‡350	2½	1⅛	3½	Nos. 454-500SS
310	2¼	125	190	255	‡350	2½	**⅜	2½	No. 450 Eureka
435	2¾	50	125	170	255	3	1⅛	4½	Nos. 454-500SS
645	3¼	...	40	110	180	3½	1⅜	5	Nos. 454-500SS
***855**	3¾	...	...	60	135	4	1⅜	6	Nos. 454-500SS
†245	2	160	230	320	‡350	‖	‖	4	††
†380	2½	70	150	205	300	‖	‖	4½	††
†550	3	30	100	140	210	‖	‖	5	††

*Plunger cannot be pulled through discharge pump head.

†Capacities when used with closed type cylinder.

‡Maximum depth for which pump is recommended.

‖Closed type cylinders tapped 1¼ inches. Use ⅜-inch pipe or 7/16-inch rod. If 1⅛-inch wood rod is used specify cylinder tapped 1½ inches.

**Pipe.

††Used closed type cylinder No. 111SS for settings up to 135 feet; No. 136-3 for settings over 135 feet.

If open tank is above pump, deduct elevation of tank from above figures for cylinder setting.

Motor Units Only

Outfit includes pump with pressure cylinder, multiple V-belt drive and motor. Motors of ½ and ¾ hp. are 110-220-volt, 60-cycle, single-phase capacitor type. Motors of 1 hp. and larger are 110-220-volt, 50-cycle, single-phase, repulsion induction type. No tank, piping, motor control switch, well cylinder, pump rod or drop pipe is included.

Stroke, 6 inches. Strokes per minute, 50. Piston rod: diameter, ⅝ inch; threads per inch, 12. Drop pipe tap, 3½ inches. Discharge pipe tap, 1½ inches. Standard pressure cylinder, 2½ inches.

No.	**605**	**607**	**610**	**615**
Hp.	½	¾	1	1½
No. Drive Belts	2	3	3	4
Approx. Ship. Wt.........pounds	275	300	330	370

Series 400 McDonald Automatic Electric Deep Well Water Systems

4-Inch Stroke—V-Belt Drive
For Raising Water from Depths Greater than 25 Feet

Automatic Pressure Tank Service—20 to 40 Pounds
Capacitor Type Motor—110-220 Volts, 60 Cy., Single Phase

McDONALD
AUTOMATIC
WATER SYSTEM

Outfit includes 4-inch stroke deep well head complete with motor, galvanized storage tank with pressure gauge and air volume control, motor control switch, relief valve, and pump to tank pipe and fittings.

No well cylinder, pump rod or drop pipe included.

Strokes per minute, 60.

Piston rod diameter, 5/8-inch with 12 threads per inch.

Drop pipe tapped, 2 1/2 inches. Discharge pipe tapped, 1 1/4 inches. Standard pressure cylinder, 2 inches.

Pump Features

Internal mechanism, discharge chamber and air compressor fully enclosed and weatherproof.

Discharge chamber is independent of main housing to permit easy installation and alignment. Provided with built in high grade check valve. Bolted to main housing.

Complete power mechanism is removable from main housing without disturbing motor, wiring or piping.

Dual working parts centrally located for balance.

Large bearing with naval bronze removable bushings on revolving shafts. Close grain cast iron gears accurately machine cut. High carbon steel pinion finished from solid billet and integral with pinion shaft. Force feed lubrication to all moving parts not submerged in oil.

Removable type differential cylinder will pass the largest plunger that can be removed through standard drop pipe. Designed to prevent water entering the main housing.

Multiple V-belt drive from motor sheave to flat face—safety pulley on pump. Air compressor pumps air full length of stroke; floating drive, self adjusting.

Underwriters' approved electric controls.

Overload protection furnished in either motor or control, whichever permits more efficient service.

Heather green enamel finish.

When ordering, specify No. and motor characteristics.

Gal. per Hour	Cyl. Diam. Inches	Maximum Lift in Feet—Max. Pressure 40 Lb.—For Motor, Hp. 1/8	1/2	3/4	Size Drop Pipe In.	Size Wood Rod or Pipe In.	Size Well Casing In.
160	1 13/16	95	185	300	2	3/8 Pipe	2
170	1 7/8	95	185	300	2	1 1/8	3
250	2 1/4	35	95	175	2 1/2	1 1/8	3 1/2
245	2 1/2	35	95	175	2 1/2	3/8 Pipe	2 1/2
345	2 3/4	..	35	95	3	1 1/8	4–4 1/2
515	3 1/4	..	...	40	3 1/2	1 3/8	5
*195	2	65	135	230	†	†	4
*305	2 1/2	..	60	135	†	†	4 1/2
*440	3	..	...	65	†	†	5

Tank Capacity Gal.	With 1/3 Hp. Motor—2 Drive Belts No.	Approx. Ship. Wt., Lb.	With 1/2 Hp. Motor—2 Drive Belts No.	Approx. Ship. Wt., Lb.	With 3/4 Hp. Motor—3 Drive Belts No.	Approx. Ship. Wt., Lb.
42	**403-42**	350	**405-42**	365	**407-42**	380
82	**403-82**	420	**405-82**	430	**407-82**	445
120	**403-120**	475	**405-120**	485	**407-120**	500

*Capacity when used with closed type cylinder.

†Closed type cylinders tapped 1 1/4 inches, use 3/8-inch pipe or 7/16-inch rod. If 1 1/8-inch wood rod is used, specify cylinder tapped 1 1/2 inches.

Series 600 McDonald Automatic Electric Deep Well Water Systems

6-Inch Stroke—V-Belt Drive
For Raising Water from Depths Greater than 25 Feet

Automatic Pressure Tank Service—20 to 40 Pounds
Motor—110-220 Volts, 60 Cycles, Single Phase

McDONALD
AUTOMATIC
WATER SYSTEM

Outfit includes 6-inch stroke deep well head complete with motor, galvanized storage tank with pressure gauge and air volume control, motor control switch, relief valve, and pump to tank pipe and fittings. No well cylinder, pump rod or drop pipe included.

Strokes per minute, 50.

Piston rod diameter, 5/8-inch with 12 threads per inch.

Drop pipe tapped, 3 1/2 inches. Discharge pipe tapped, 1 1/2 inches. Standard pressure cylinder, 2 1/2 inches.

Pump Features

Internal mechanism, discharge chamber and air compressor fully enclosed and weatherproof.

Discharge chamber is independent of main housing to permit easy installation and alignment. Provided with built in high grade check valve. Bolted to main housing.

Complete power mechanism is removable from main housing without disturbing motor, wiring or piping.

Dual working parts centrally located for balance.

Large bearing with naval bronze removable bushings on revolving shafts. Close grain cast iron gears accurately machine cut. High carbon steel pinion finished from solid billet and integral with pinion shaft. Force feed lubrication to all moving parts not submerged in oil.

Removable type differential cylinder will pass the largest plunger that can be removed through standard drop pipe. Designed to prevent water entering the main housing.

Multiple V-belt drive from motor sheave to flat face—safety pulley on pump. Air compressor pumps air full length of stroke; floating drive, self adjusting.

Underwriters' approved electric controls.

Overload protection furnished in either motor or control, whichever permits more efficient service.

Heather green enamel finish.

When ordering, specify No. and motor characteristics.

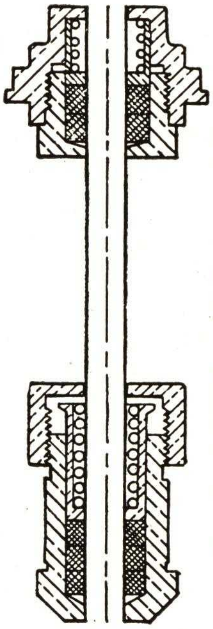
Gal. per Hour	Cyl. Diam. Inches	Maximum Lift in Feet Max. Pressure 40 Lb.—For Motor, Hp. 1/2	3/4	1	1 1/2	Size Drop Pipe In.	Size Wood Rod or Pipe In.	Size Well Casing In.
200	1 13/16	125	220	300	...	2	3/8 Pipe	2
215	1 7/8	125	220	300	...	2	1 1/8	3
315	2 1/4	55	120	185	300	2 1/2	1 1/8	3 1/2
310	2 1/4	55	120	185	300	2 1/2	3/8 Pipe	2 1/2
435	2 3/4	...	55	100	185	3	1 1/8	4–4 1/2
645	3 1/4	...	...	40	110	3 1/2	1 3/8	5
855	3 3/4	...	...	...	65	4	1 3/8	6
*245	2	90	160	250	350	†	†	4
*380	2 1/2	...	80	135	230	†	†	4 1/2
*550	3	...	30	70	140	†	†	5

Tank Capacity Gal.	Capacitor Type Motor 1/2 Hp.—2 Drive Belts No.	Approx. Ship. Wt., Lb.	Capacitor Type Motor 3/4 Hp.—3 Drive Belts No.	Approx. Ship. Wt., Lb.	Repulsion Induction Type Motor 1 Hp.—3 Drive Belts No.	Approx. Ship. Wt., Lb.	Repulsion Induction Type Motor 1 1/2 Hp.—4 Drive Belts No.	Approx. Ship. Wt., Lb.
42	**605-42**	495	**607-42**	510	**610-42**	530	**615-42**	565
82	**605-82**	560	**607-82**	575	**610-82**	595	**615-82**	630
120	**605-120**	615	**607-120**	630	**610-120**	650	**615-120**	685

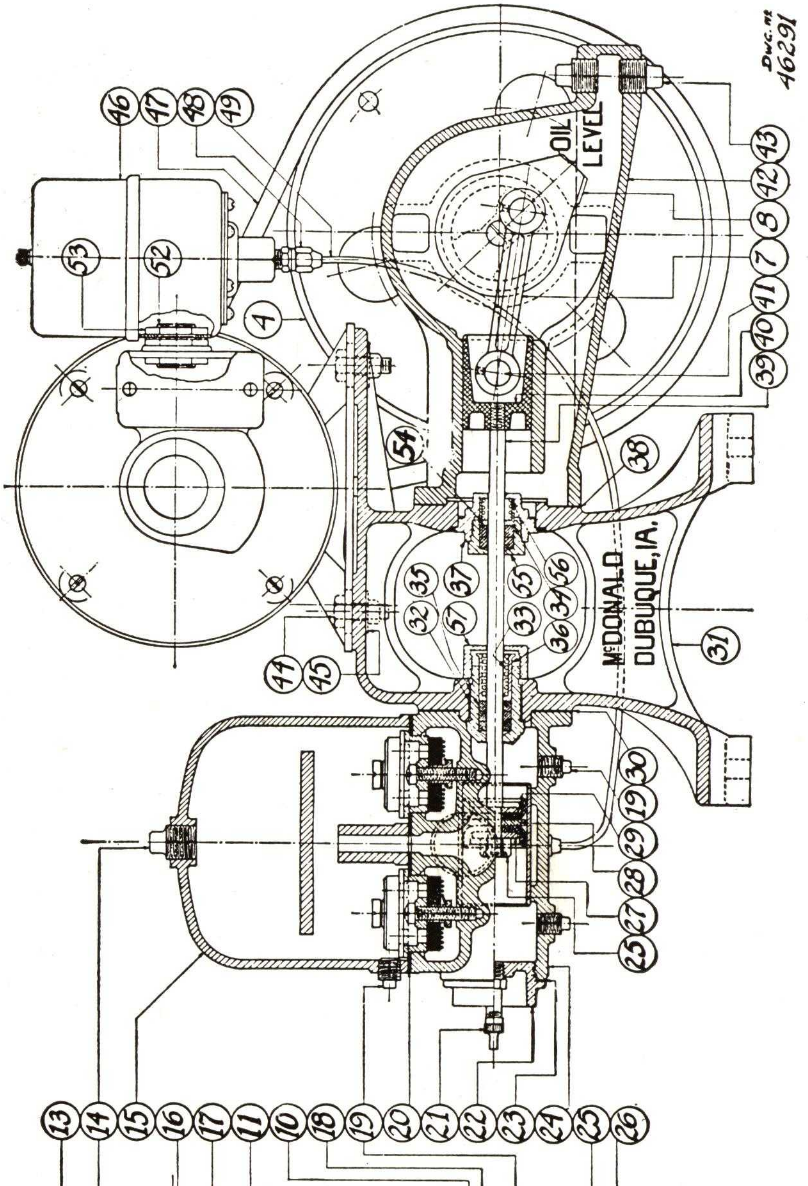
*Capacity when used with closed type cylinder.

†Closed type cylinders tapped 1 1/4 inches, used 3/8-inch pipe or 7/16-inch rod. If 1 1/8-inch wood rod is used, specify cylinder tapped 1 1/2 inches.

Series 420-1 and 420-2 McDonald Shallow Well Pumps



Detail of McDonald Improved Spring Tension Stuffing Boxes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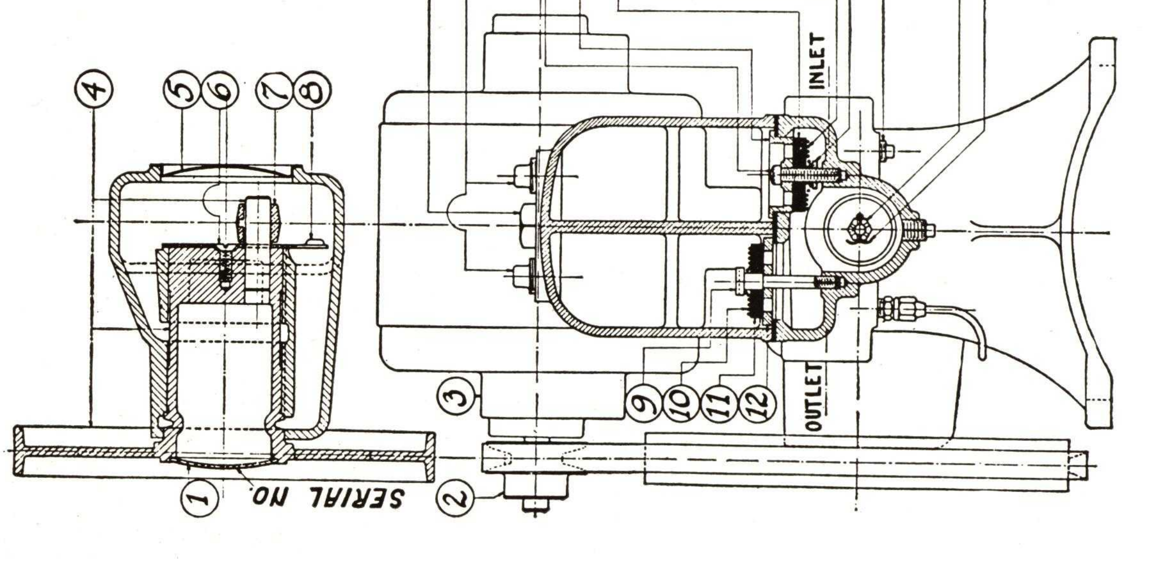
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McDonald Shallow Well Pump Parts

For 420-1 and 420-2 Pumps Only and Series 420-M Systems

Series 420-1 and 420-2

When ordering, specify Key No., Part No., description as shown, and Serial No. of pump for which parts are ordered.

Power End Parts

Key No.	Part No.	Description	No. Required	Each
42A	.....	Complete Power End Assembly, Includes Following Parts	.	$15.13
*42	45808	Power End Housing	1	6.60
*4	45809	Pulley and Crank Pin	1	4.40
*1	43395	2⅛-In. Welsh Power End Seal Plug	1	.11
*5	45829	Cover	1	.22
*6	45831	¼-20x⅝-In. Flat Head Machine Screw	1	.06
*7	45827	Connecting Rod	1	1.65
*8	45830	Oil Slinger	1	.17
*38	45826	Power End Gasket	1	.11
*40	42945	Cross Head	1	.83
*41	42951	Cross Head Pin	1	.44
*50	45823	⅜x1¼-In. Hex. Head Cap-Screw	2	.11
*51	45403	⅜-16 Semi-Finished Hex. Nut	2	.06
*43	.....	⅜-In. Oil Filler or Power End Drain Plug	2	.11

Motor Stand Parts

Key No.	Part No.	Description	No. Required	Each
31A	.....	Complete Motor Stand Assembly, Includes Following Parts		$10.78
*31	45805	Motor Stand Bare	1	8.25
*32	46834	Water End Stuffing Box	1	.55
*33	46837	Water End Stuffing Box Spring	1	.17
*35	46047	Water End Stuffing Box Packing	1	.33
*36	46835	Water End Stuffing Box Gland	1	.11
*57	46836	Water End Stuffing Box Nut	1	.17
*37	46607	Oil End Stuffing Box	1	.55
*34	46606	Oil End Stuffing Box Gland	1	.11
*54	46572	Oil End Stuffing Box Packing	1	.33
*55	46608	Oil End Stuffing Box Nut	1	.11
*56	46605	Oil End Stuffing Box Spring	1	.11

Water End Parts

Key No.	Part No.	Description	No. Required	Each
24A	.....	Complete Water End Assembly, Includes Following Parts:		
		Series 420-1	.	$18.04
		Series 420-2	.	19.70
24	45806	Water End and Liner; Series 420-1	1	5.50
*19	.....	⅛-In. Water End Drain Plugs	3	.06
*12A	.....	Discharge Valves Complete	2	1.16
*11	45812	Discharge Rubber Valves	2	.22
*12	45810	Discharge Valve Seat	2	.49
*10	45813	Discharge Valve Spring	2	.22
*9	45815	Discharge Valve Screw	2	.28
*17A	.....	Suction Valve Complete	2	.90
*11	45812	Suction Rubber Valve	2	.22
*17	45811	Suction Valve Seat	2	.22
*10	45813	Suction Valve Spring	2	.22
*18	45816	Suction Valve Bushing	2	.06
*16	45814	Suction Valve Screw	2	.28
15	45807	Air Chamber; Series 420-1	1	3.30
*19	.....	Water End Drain Plug	2	.06
*14	42577	Priming Plug	2	.07
22	45821	Water End Cap	1	.55
*21	43217	Air Inlet Valve	1	.39
29A	42952	Piston and Piston Rod Assembly; Series 420-1	1	2.20
29	.....	Plunger Leather	2	.28

*Interchangeable with Series 420-1 or 420-2 pumps.

Water End Parts

Key No.	Part No.	Description	No. Required	Each
28	42956	Center Plate	1	$.06
27	43137	Plunger Plate	2	.06
*39	45825	Piston Rod Only	1	1.10
*25	43136	Piston Rod Nut	1	.22
*26	43949	Cotter Pin	1	.06
13	45817	Water Bonnet Stud Bolt; Series 420-1	1	.33
*20	45818	Top Gasket	1	.55
*30	45819	Water End Gasket	1	.09
23	45822	Water End Rear Gasket	1	.11
*50	45823	⅜x1¼-Inch Hex. Head Cap-Screw	2	.11
*51	45403	⅜-Inch Semi-Finished Nuts	2	.06
24	46642	Water End and Liner; Series 420-2	1	6.60
15	46782	Air Chamber; Series 420-2	1	3.85
22	46643	Water End Cap; Series 420-2	1	.55
29A	.....	Piston and Piston Rod Assembly; Series 420-2	1	2.20
29	43468	Plunger Leather; Series 420-2	2	.28
28	43470	Center Plate; Series 420-2	1	.06
27	46840	Plunger Plate; Series 420-2	2	.06
13	46838	Water Bonnet Stud Bolt; Series 420-2	1	.39
23	46645	Water End Rear Gasket; Series 420-2	1	.11

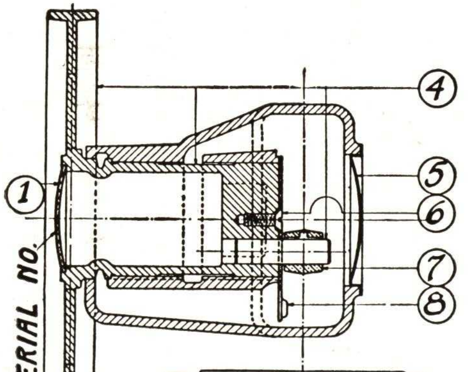
Miscellaneous Parts

Key No.	Part No.	Description	No. Required	Each
46	45837	Pressure Switch with Hand Reset Relay; Series 420-1	1	$6.05
46	47013	Pressure Switch with Hand Reset Relay; Series 420-2	1	6.05
*48	46118A	Pressure Switch Tubing and Connections	1	.83
2	46949	Motor Pulley and Set-Screw; Series 420-1	1	.83
2	45834	Motor Pulley and Set-Screw; Series 420-2	1	.83
*44	45832	Motor Base Machine Bolt with Nut and Washer	4	.11
47	46950	V-Belt; Series 420-1	1	.83
47	45836	V-Belt; Series 420-2	1	.83
52	46117	½-Inch Running Nipple	1	.11
53	46160	½-Inch Conduit Locknut	3	.18
...	E-6214	½-Inch Brass Water Relief Valve	.	1.87
...	.....	Complete Set of Packings (Consists of 2 Plunger Leathers, 4 Valve Rubbers Piston Rod Packing and Gaskets); Specify Series 420-1 or 420-2	.	1.65

Parts for Pumps Mounted on 10 or 25 Gallon Tanks Only

Key No.	Part No.	Description	No. Required	Each
...	.....	10-Gallon Tank	1	$15.45
...	.....	25-Gallon Tank	1	21.23
*	S-46046	Air Volume Control with Tubing	1	3.08
*	S-45869	Chromium Plated Combination Relief Valve and Elbow	1	1.98
*	46032	Rubber Hose	1	.28
*	46123	Hose Clamps	2	.22
*	46124	5⁄16x1¼-Inch Cap-Screws	.	.11
*49	46118	Chromium Plated Tubing with Flare Fitting Only	1	.55
*	.....	Pressure Gauge 2-Inch Dial	1	1.32

Series 420-3 and 420-4 McDonald Shallow Well Pumps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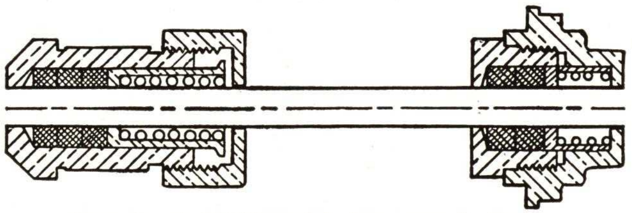
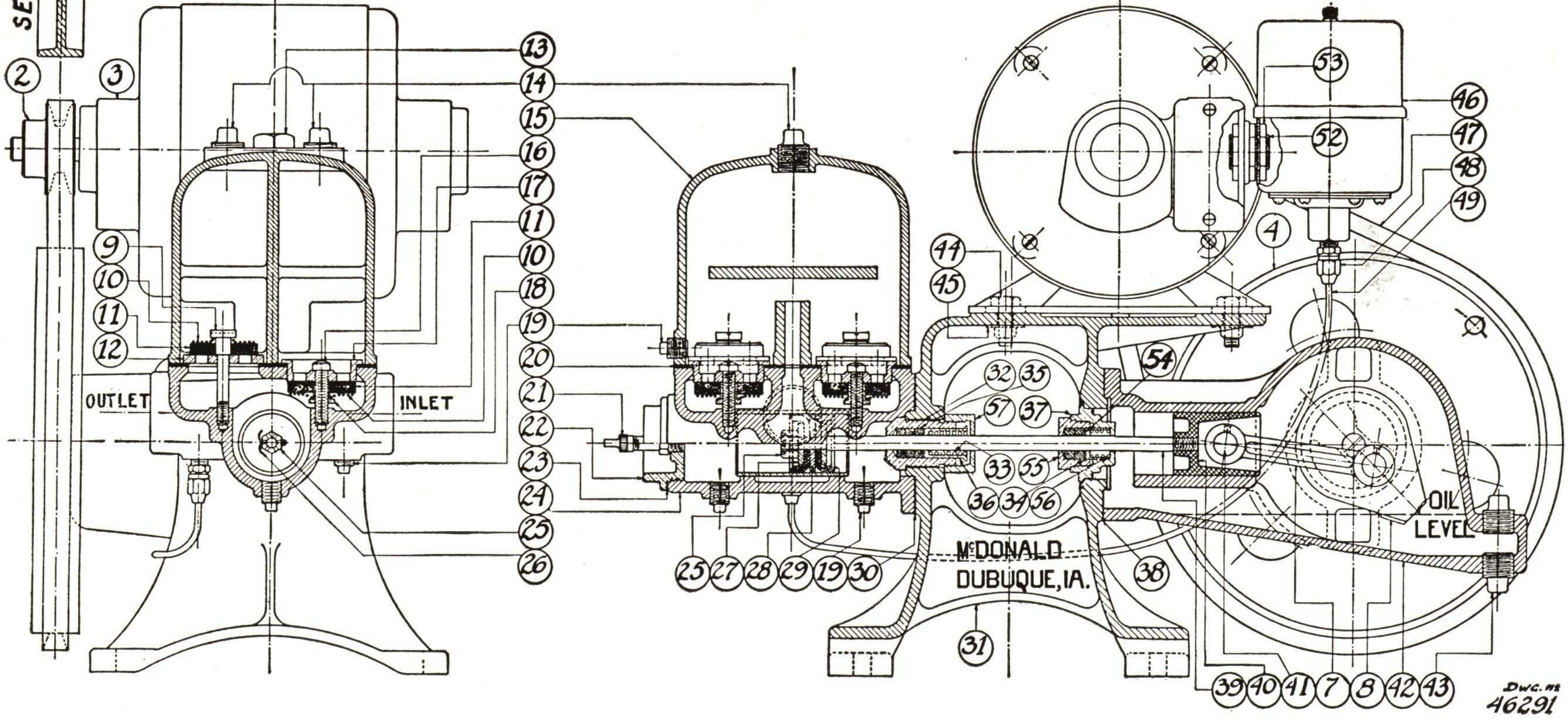


Detail of McDonald Improved Spring Tension Stuffing Boxes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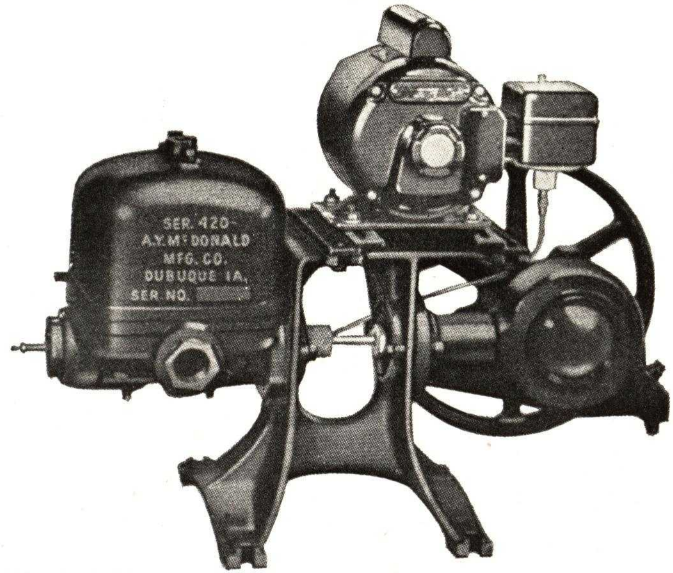
McDonald Shallow Well Pump Parts

For Pump Series 420-3 and 420-4



When ordering, specify Key No., Part No., description as shown, and Serial No. of pump for which parts are ordered.

Power End Parts

Key No.	Part No.	Description	No. Required	Each
42A	.....	Complete Power End Assembly, Includes Following Parts	.	$26.57
*42	46793	Power End Housing	1	11.88
*4	46794	Pulley and Crank Pin	1	7.92
*1	43396	2¼-Inch Welsh Power End Seal Plug	1	.20
*5	42948	Cover	1	.40
*6	45831	¼-20x⅝ Flat Head Machine Screw	1	.06
*7	46825	Connecting Rod	1	2.97
*8	46826	Oil Slinger	1	.33
*38	46806	Power End Gasket	1	.20
*40	46824	Cross Head	1	1.49
*41	42951	Cross Head Pin	1	.77
*50	46815	⅜x1¾ Hex. Head Cap-Screw	2	.20
*51	45403	⅜-16 Semi-Finished Hex. Nut	2	.06
*43	.....	⅜ Oil Filler or Power End Drain Plug	2	.11

Motor Stand Parts

Key No.	Part No.	Description	No. Required	Each
31A	.....	Complete Motor Stand Assembly, Includes Following Parts	.	$19.25
*31	46788	Motor Stand Bare	.	14.85
*32	46809	Water End Stuffing Box	1	.99
*33	46811	Water End Stuffing Box Spring	1	.28
*35	46047	Water End Stuffing Box Packing	1	.55
*36	46810	Water End Stuffing Box Gland	1	.22
*57	46812	Water End Stuffing Box Nut	1	.33
*37	46827	Oil End Stuffing Box	1	.99
*34	46828	Oil End Stuffing Box Gland	1	.22
*54	46572	Oil End Stuffing Box Packing	1	.44
*55	46829	Oil End Stuffing Box Nut	1	.20
*56	46830	Oil End Stuffing Box Spring	1	.20

Water End Parts

Key No.	Part No.	Description	No. Required	Each
24A	.....	Complete Water End Assembly, Includes Following Parts:		
		Series 420-3	.	$32.45
		Series 420-4	.	35.42
24	46789	Water End and Liner; Series 420-3	1	9.90
*19	.....	⅛-Inch Water End Drain Plugs	3	.06
*12A	.....	Discharge Valves Complete	2	2.04
*11	46797	Discharge Rubber Valves	2	.33
*12	46795	Discharge Valve Seat	2	.77
*10	46798	Discharge Valve Spring	2	.33
*9	46799	Discharge Valve Screw	2	.44
*17A	.....	Suction Valve Complete	2	1.76
*11	46797	Suction Rubber Valve	2	.33
*17	46796	Suction Valve Seat	2	.33
*10	46798	Suction Valve Spring	2	.33
*18	46801	Suction Valve Bushing	2	.06
*16	46800	Suction Valve Screw	2	.33

*Interchangeable with Series 420-3 or 420-4 pumps.

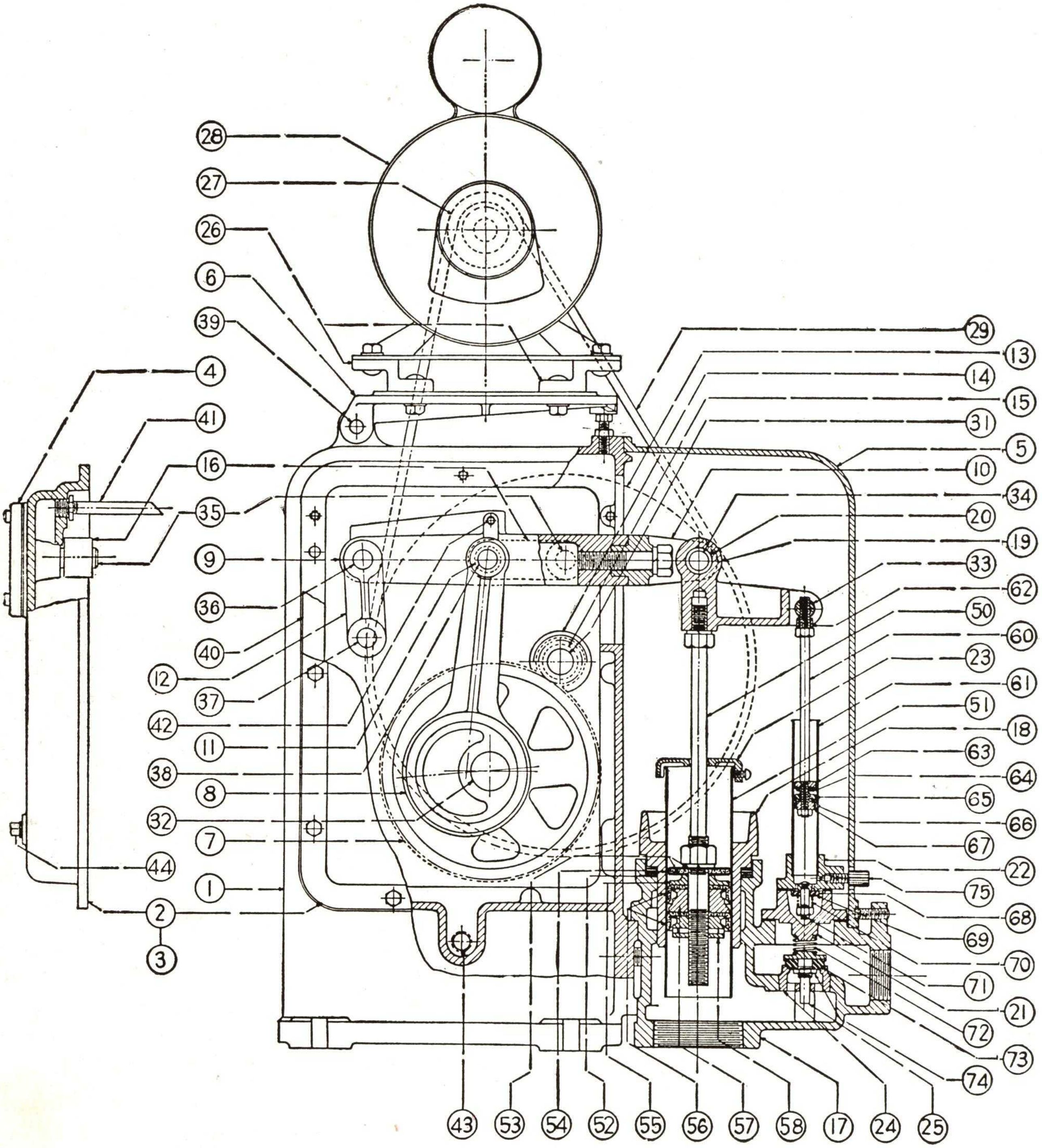
Water End Parts

Key No.	Part No.	Description	No. Required	Each
15	46791	Air Chamber; Series 420-3	1	$5.94
*19	.....	Water End Drain Plug	2	.06
*14	42577	Priming Plug	2	.11
*22	46813	Water End Cap	1	.99
*21	43217	Air Inlet Valve	1	.39
29A	42952	Piston and Piston Rod Assembly; Series 420-3	1	3.96
29	46817	Plunger Leather; Series 420-3	2	.33
28	46819	Center Plate; Series 420-3	1	.11
27	46821	Plunger Plate; Series 420-3	2	.11
*39	46816	Piston Rod Only	1	1.98
*25	46823	Piston Rod Nut	1	.33
*26	43949	Cotter Pin	1	.06
13	46802	Water Bonnet Stud; Series 420-3	1	.55
*20	46805	Top Gasket	1	.55
*30	46806	Water End Gasket	1	.11
*23	46814	Water End Rear Gasket	1	.17
*50	46815	⅜x1¾ Hex. Cap-Screw	2	.11
24	46790	Water End and Liner; Series 420-4	1	11.88
15	46792	Air Chamber; Series 420-4	1	6.60
29A	.....	Piston and Piston Rod Assembly; Series 420-4	1	3.96
29	46818	Plunger Leather; Series 420-4	2	.33
28	46820	Center Plate; Series 420-4	1	.11
27	46822	Plunger Plate; Series 420-4	2	.11
13	46803	Water Bonnet Stud; Series 420-4	1	.55

Miscellaneous Parts

Key No.	Part No.	Description	No. Required	Each
46	.....	Pressure Switch with Hand Reset Relay (Give Motor Amp. Rating)	1	$6.05
*48	46119A	Pressure Switch Tubing and Connections	1	.83
2	46831	Motor Pulley and Set-Screw; Series 420-3	1	.83
2	46832	Motor Pulley and Set-Screw; Series 420-4	1	.83
*44	.....	Motor Base Machine Bolt with Nut and Washer	4	.11
47	46833	V-Belt; Series 420-3	2	.83
47	46833	V-Belt; Series 420-4	3	.83
52	46117	½-Inch Running Nipple	1	.11
53	46160	½-Inch Conduit Locknut	3	.11
...	E-6214	¾-Inch Brass Water Relief Valve; Series 420-3	1	2.48
...	E-6214	1-Inch Brass Water Relief Valve; Series 420-4	1	3.41
...	.....	Complete Set of Packings (Consists of 2 Plunger Leathers, 4 Valve Rubbers, Piston Rod Packing and Gaskets); Specify Either Series 420-3 or 420-4	.	1.98

Series 400 McDonald Deep Well Pumps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McDonald Deep Well Pump Parts

For Pump Series 400

When ordering, specify Key No., description as shown, and Serial No. of pump.

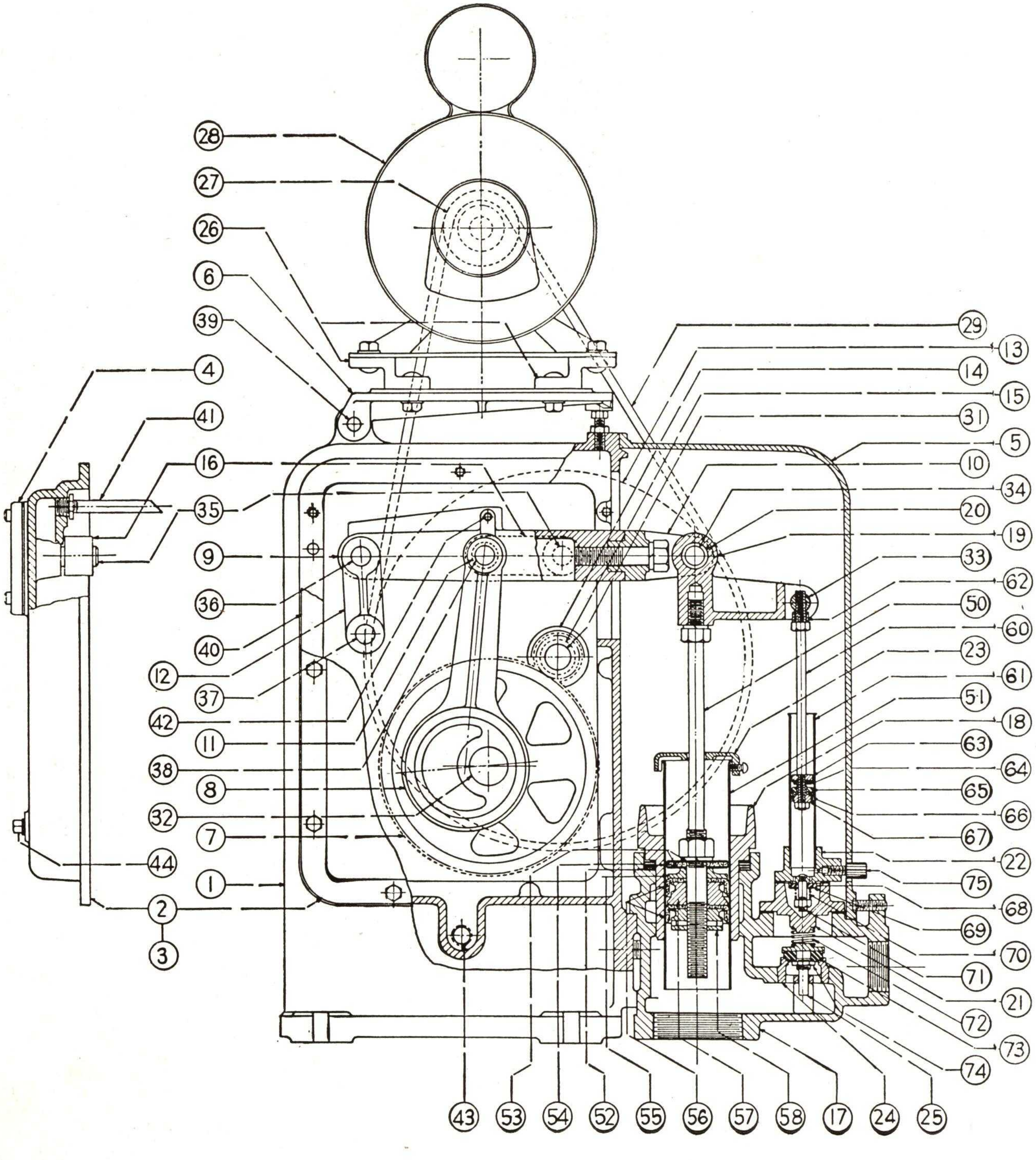
Key No.	Description	No. Re-quired	Each
1	Housing	1	$11.55
2	Side Plate—Pulley Side	1	4.68
3	Side Plate—Opposite Pulley	1	4.40
4	Handhole Plate	1	.33
5	Front Cover	1	3.03
6	Motor Bracket	1	.66
7	Crank Gear	1	6.05
8	Connecting Rod (In Pairs Only)	2	*2.20
9	Walking Beam	1	3.41
10	Walking Beam End	1	.94
11	Walking Beam Bushing	1	.33
12	Oscillating Link	1	.83
13	Pump Pulley for ⅓-Hp. Motor	1	3.14
13	Pump Pulley for ½-Hp. Motor	1	3.14
13	Pump Pulley for ¾-Hp. Motor	1	4.79
14	Cup Bushing	2	.99
15	Plain Bushing	1	.44
16	Compensating Link	2	*.17
17	Discharge Chamber	1	5.28
18	Discharge Chamber Gland	1	2.15
19	Piston Rod End	1	.88
20	Piston Rod End Bushing	2	.22
21	Air Pump Flange	1	.99
22	Air Pump Base	1	.55
23	Splash Cap	1	.28
24	Check Valve Seat	1	.28
25	Check Valve Poppet	1	.17
26	Motor Rail for ⅓-Hp. Motor	2	.20
26	Motor Rail for ½-Hp. Motor	2	.22
26	Motor Rail for ¾-Hp. Motor	2	.20
27	Motor Pulley for ⅓-Hp. Motor	1	.88
27	Motor Pulley for ½-Hp. Motor	1	.88
27	Motor Pulley for ¾-Hp. Pulley	1	2.48
28	⅓-Hp. Motor	1	†
28	½-Hp. Motor	1	†
28	¾-Hp. Motor	1	†
29	V-Belt for ⅓-Hp. Motor	2	1.10
29	V-Belt for ½-Hp. Motor	2	1.16
29	V-Belt for ¾-Hp. Motor	3	1.16
31	Pinion and Shaft	1	5.39
32	Crank Gear Shaft	1	1.60

Key No.	Description	No. Re-quired	Each
33	Air Pump Wrist Pin	1	$.33
34	Piston Rod End Pin	1	.22
35	Compensating Link Pivot Pin	2	.33
36	Walking Beam Fulcrum Pin	1	.33
37	Oscillating Link Pivot Pin	1	.50
38	Connecting Rod Wrist Pin	1	.28
39	Motor Bracket Hinge Pin	1	.17
40	Side Plate Gasket	2	.50
41	Oil Tube and Bushing	1	.17
42	Oil Distributing Tube	2	.06
43	Oil Drain Plug	1	.06
44	Oil Level Plug	1	.06
45	Hand Hole Plate Gasket	1	.11
46	Oil Pump Flange Gasket	1	.06
47	Oil Pump Base Gasket	1	.06
48	Walking Beam Cap-Screw	1	.11
50	Piston Rod	1	1.16
51	Differential Cylinder	1	.99
52	Discharge Chamber Gland Packing	1	.09
53	Splash Disc Cover Plate	1	.17
54	Splash Disc	1	.06
55	Cup Leather Cover Plate	1	.28
56	Cup Leather	2	.28
57	Upper Piston Follower	1	.61
58	Lower Piston Follower	1	.50
60	Air Pump Piston Rod	1	.44
61	Air Pump Cylinder	1	.33
62	Air Pump Piston Rod Spacer	1	.06
63	Air Pump Inlet Valve Cup	1	.11
64	Air Pump Inlet Valve Disc	1	.06
65	Air Pump Piston Follower Nut	1	.06
66	Air Pump Cup Leather	1	.06
67	Air Pump Piston Follower	1	.11
68	Air Pump Valve Disc	1	.06
69	Air Pump Valve Plate	1	.06
70	Air Pump Valve Spring	1	.06
71	Air Pump Valve Stem	1	.11
72	Check Valve Poppet Spring	1	.11
73	Check Valve Poppet Rubber	1	.06
74	Check Valve Poppet Nut	1	.06
75	Air Release Valve	1	.17

*Per pair.

†Price upon application.

Series 600 McDonald Deep Well Pumps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McDonald Deep Well Pump Parts

For Pump Series 600

When ordering, specify Key No., description as shown, and Serial No. of pump.

Key No.	Description	No. Required	Each
1	Housing	1	$23.10
2	Side Plate—Pulley Side	1	7.15
3	Side Plate—Opposite Pulley	1	6.60
4	Hand Hole Plate	1	.50
5	Front Cover	1	4.68
6	Motor Bracket	1	1.10
7	Crank Gear	1	12.10
8	Connecting Rods (In Pairs Only)	2	*4.40
9	Walking Beam	1	5.23
10	Walking Beam End	1	1.43
11	Walking Beam Bushing	1	.55
12	Oscillating Link	1	1.38
13	Pump Pulley for ½-Hp. Motor	1	4.95
13	Pump Pulley for ¾-Hp. Motor	1	4.95
13	Pump Pulley for 1-Hp. Motor	1	4.95
13	Pump Pulley for 1½-Hp. Motor	1	7.15
14	Cup Bushing	2	1.49
15	Plain Bushing	1	.66
16	Compensating Link	2	*.33
17	Discharge Chamber	1	7.82
18	Discharge Chamber Gland	1	3.25
19	Piston Rod End	1	1.32
20	Piston Rod End Bushing	2	.33
21	Air Pump Flange	1	1.49
22	Air Pump Base	1	.83
23	Splash Cap	1	.44
24	Check Valve Seat	1	.44
25	Check Valve Poppet	1	.33
26	Motor Rail for ½-Hp. Motor	2	.33
26	Motor Rail for ¾-Hp. Motor	2	.33
26	Motor Rail for 1-Hp. Motor	2	.33
26	Motor Rail for 1½-Hp. Motor	2	.33
27	Motor Pulley for ½-Hp. Motor	1	1.32
27	Motor Pulley for ¾-Hp. Motor	1	1.98
27	Motor Pulley for 1-Hp. Motor	1	1.98
27	Motor Pulley for 1½-Hp. Motor	1	3.96
28	½-Hp. Motor	1	†
28	¾-Hp. Motor	1	†
28	1-Hp. Motor	1	†
28	1½-Hp. Motor	1	†
29	V-Belt for ½-Hp. Motor	2	1.38
29	V-Belt for ¾-Hp. Motor	3	1.38
29	V-Belt for 1-Hp. Motor	3	1.43
29	V-Belt for 1½-Hp. Motor	4	1.43

*Per pair.
†Price upon application.

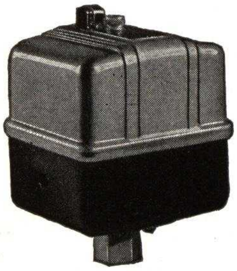
Key No.	Description	No. Required	Each
31	Pinion and Shaft	1	$8.14
32	Crank Gear Shaft	1	2.42
33	Air Pump Wrist Pin	1	.50
34	Piston Rod End Pin	1	.33
35	Compensating Link Pivot Pin	2	.50
36	Walking Beam Fulcrum Pin	1	.50
37	Oscillating Link Pivot Pin	1	.77
38	Connecting Rod Wrist Pin	1	.44
39	Motor Bracket Hinge Pin	1	.28
40	Side Plate Gasket	2	.77
41	Oil Tube and Bushing	1	.28
42	Oil Distributing Tube	2	.11
43	Oil Drain Plug	1	.11
44	Oil Level Plug	1	.11
45	Hand Hole Plate Gasket	1	.17
46	Air Pump Flange Gasket	1	.11
47	Air Pump Base Gasket	1	.11
48	Walking Beam Cap-Screw	1	.17
50	Piston Rod	1	1.76
51	Differential Cylinder	1	1.49
52	Discharge Chamber Gland Packing	1	.13
53	Splash Disc Cover Plate	1	.28
54	Splash Disc	1	.11
55	Cup Leather Cover Plate	1	.44
56	Cup Leather	2	.44
57	Upper Piston Follower	1	.94
58	Lower Piston Follower	1	.77
60	Air Pump Piston Rod	1	.66
61	Air Pump Cylinder	1	.50
62	Air Pump Piston Rod Spacer	1	.11
63	Air Pump Inlet Valve Cup	1	.17
64	Air Pump Inlet Valve Disc	1	.11
65	Air Pump Piston Follower Nut	1	.11
66	Air Pump Cup Leather	1	.11
67	Air Pump Piston Follower	1	.17
68	Air Pump Valve Disc	1	.11
69	Air Pump Valve Plate	1	.11
70	Air Pump Valve Spring	1	.11
71	Air Pump Valve Stem	1	.17
72	Check Valve Poppet Spring	1	.17
73	Check Valve Poppet Rubber	1	.11
74	Check Valve Poppet Nut	1	.11
75	Air Release Valve	1	.28

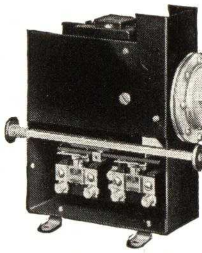
McDonald Automatic Pump Control Equipment

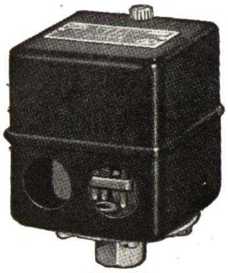
Pressure Switches

No. 150BP01-1

No. 150BP01 and
No. 152BP01

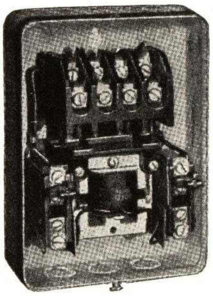

No. 9213A


No. 9013CK


No. G8

For McDonald Pump No.	Motor Hp.	Alternating Current				Direct Current		
		Single Phase		3-Phase				
		110 Volts No.	220 Volts No.	220 Volts No.	440 Volts No.	32 Volts No.	115 Volts No.	230 Volts No.
420–1	...	150BP01	150BP01	....	....	150BP01	150BP01	150BP01
420–2	¼	150BP01	150BP01	....	....	150BP01	150BP01	150BP01
Jet	¼	G8	G8	....	....	....	....	....
420–3	⅓	150BP01	150BP01	....	....	....	152BP01	152BP01
403	⅓	150BP01–1	150BP01–1	....	....	....	9213A	9213A
Jet	⅓	G8	G8	....	....	....	....	....
420–4	½	150BP01	150BP01	....	....	....	152BP01	152BP01
405	½	150BP01–1	150BP01–1	....	....	....	9213A	9213A
476, 580, 605	½	9213A	9213A	....	....	....	9213A	9213A
Jet	½	G8	G8	....	....	....	....	....
407	¾	150BP01–1	150BP01–1	....	....	....	150BP01–1 CR4052AIL	150BP01–1 CR4052AIL
476, 480, 607	¾	9213A	9213A	....	....	....	9213A CR4052AIL	9213A CR4052AIL
Jet	¾	G8	G8	....	....	....	....	....
Jet	1	G8	G8	....	....	......	....	....
416-12, 476, 480, 610	1	9213A	9213A	9013CK	9013CK	....	9213A CR4052AIL	9213A CR4052AIL
416-12, 476, 480, 615	1½	....	9013AKS	9013CK	9013CK	....	9213A CR4052AIL	9213A CR4052AIL
416-12, 476, 480	2	....	9213A CR7006-D51GB	9213A CR7006-D50B	9213A CR7006-D50B	....	9213A CR4052AIL	9213A CR4052AIL
416-12, 476, 480	3	....	9213A CR7006-D51GB	9213A CR7006-D51GB	9213A CR7006–D51GB	....	9213A CR4052AIL	9213A CR4052AIL
476	5	....	9213A CR7006–D51GB	9213A CR7006–D51GB	9213A CR7006–D51GB	....	9213A CR4052AIL	9213A 4052AIL

Automatic Starters—Line Voltage Type


Starter

Low voltage protection or release—overload protection by thermal relays.

Line starters use No. 150BP01–1 or No. 9213A as pilot.

Motor Hp.	Alternating Current			Direct Current	
	Sgle. Phase	3-Phase			
	220 Volts No.	220 Volts No.	440 Volts No.	115 Volts No.	230 Volts No.
1	....	CR7006-D50B	CR7006-D50B	CR4052-AIL	CR4052-AIL
1½	CR7006-D50B	CR7006-D50B	CR7006-D50B	CR4052-AIL	CR4052-AIL
2	CR7006-D51GB	CR7006-D50B	CR7006-D50B	CR4052-AIL	CR4052-AIL
3	CR7006-D51GB	CR7006-D51GB	CR7006-D51GB	CR4052-AIL	CR4052-AIL
5	CR7006-D40KG	CR7006-D51GB	CR7006-D51GB	CR4052-A2L	CR4052-A1L

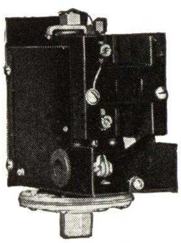
Line starters are of the magnetic contactor type and may be operated by pressure switch No. 150BP01 or No. 9213A by remote push button control. In ordering, specify type wanted, also hp. and voltage, type (a.c. or d.c.) and full load current of the motor, also if for a.c., specify phase and cycles.

Gas Engine Cut Out Switches or Circuit Breakers

No. 9213G

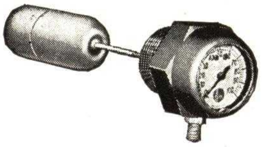
No. 9213G will automatically ground either the low-tension or high-tension side of the ignition circuit when tank pressures rise to a predetermined limit, thus stopping the engine. When the pressure drops approximately 30 per cent the switch opens, so that the engine may again be started. This circuit breaker is normally set to cut out at 60 pounds.

No. 9013G3 same as above except for pressures in excess of 80 pounds.


No. 9013G3

No. E-5813 McDonald Combination Air Volume Control and Pressure Gauges

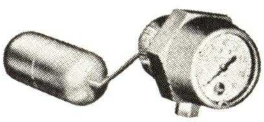
For Shallow Wells



Float operated control maintains proper volume of air in the pressure tank. Fitted with 1¼-inch pipe threaded connector for screwing into pressure tank. Air valve is connected to snifter valve on pump with copper tubing.

No. E-5814 McDonald Combination Air Volume Control and Pressure Gauges

For Deep Wells

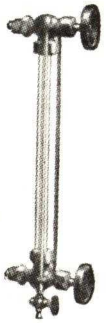


Automatically allows excess air to escape from pressure tank to atmosphere, eliminating the uncertainty of hand control of the volume of air pumped. Air valve opens on low water level, allowing excess air to escape; closes on water level rise.

Fitted with 1¼-inch pipe threaded connector for screwing into pressure tank.

McDonald Self-Cleaning Water Gauges

Rough Brass Body—Iron Wheels

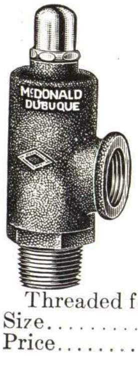


Diameter of glass, ⅝ inch. Threaded for ½-inch pipe.

Length of Glass . . . . .inches	**12**	**16**	**24**
For Tank Tappings, Ctr. to Ctr. . . . . .in.	13½	17½	25½

No. E-6214 McDonald Brass Water Relief Valves

For Cold Water



All brass, except the bronze spring and composition disc. Carefully made and tested.

Design is such that the valve pops open when pressure exceeds that at which it is set to relieve, and closes soon after the excess pressure is reduced.

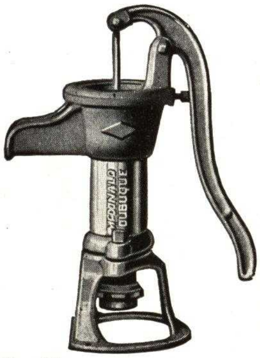
It is a valuable safety device, preventing injury to pressure tanks and other fixtures and fittings.

The ½-inch size regularly set at 60 lbs. Other sizes regularly set at 70 lbs., any size can be furnished set to relieve at any desired pressure, ranging from 10 to 125 pounds.

Threaded for iron pipe, male inlet, female outlet.

Size . . . . .inches	½	¾	1	1¼
Price . . . . .each	**$2.00**	**2.50**	**3.50**	**5.00**

No. 2 McDonald Iron Pitcher Spout Pumps



Used on shallow wells and cisterns not over 25 feet deep.

Handle is adjustable to any position.

Oversized spout insures full delivery of pump capacity.

Raising pump handle to extreme top position operates special trip valve, draining cylinder to prevent freezing.

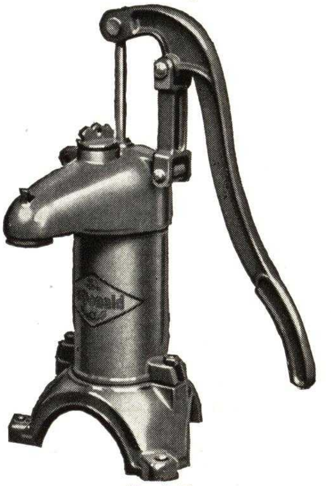
All No. 2 pumps regularly fitted for iron pipe unless otherwise specified. Lead ferrule and brass valve seats may be furnished at slight additional cost.

Size No.	**2**	**3**	**4**	**5**
No. 2, Iron Body . . . . .each	**$3.00**	**$3.00**	**$5.00**	**$8.50**
No. 2, Brass Lined Body . . . . .each	**5.00**	. . . .	. . . .	. . . .
No. 2, Polished Brass Body . .each	**8.50**	. . . .	. . . .	. . . .
No. 2, NP. Brass Body . . . . . .each	**9.35**	. . . .	. . . .	. . . .
Diam. of Cylinder . . . . .inches	3	3½	4	4½
Size of Suction . . . . .inches	1¼	1¼	1½	2
Weight .pounds	18	23	30	35

McDonald Tru-San Pitcher Pumps

Closed Spout

For Wells Not Exceeding 25 Feet in Depth



No. 2-T

Cylinder body made of sturdy close grain iron. Diamond bored for accuracy and smoothness. Extra heavy all iron plunger fitted with fine quality selected stock cup leathers. Closed type spout with oversize water area. Drip and splash-proof. Leather check of ample proportion assuring positive seal on wide face iron seat. Special trip valve drains cylinder to prevent freezing.

Smooth, rubbed galvanized piston rod operates through an oilite replaceable bushing.

Priming plug accessible and generously proportioned for quick, positive priming. Bayonet type plug locks into position making pump completely sanitary.

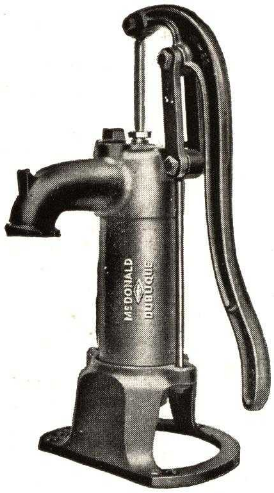
Extra strong, ventilated bridge type base. Handle may be attached to left or right side of pump.

No.	**2-T**	**3-T**
Diameter of Cylinder . . . . .inches	3	3½
Size of Suction . . . . .inches	1¼	1¼
Weight . . . . .pounds	12½	16½

Another McDonald Catalog

Ask for your copy of the complete catalog of Pumps, Water Systems, Cylinders, and Accessories.

No. 3 McDonald Improved Force Pumps



Has a closed spout and a closed top, which eliminate the possibility of foreign matter dropping into the spout or top.

To use the No. 3 as a force pump, a hose connection is attached to the spout. If water is to be forced through a discharge line, connected to the plugged opening on top of the spout, into an elevated or pressure tank, a blind washer is placed in the hose connection instead of the gasket.

Trip check valve permits draining the pump to prevent freezing. Handle can be on either side of spout.

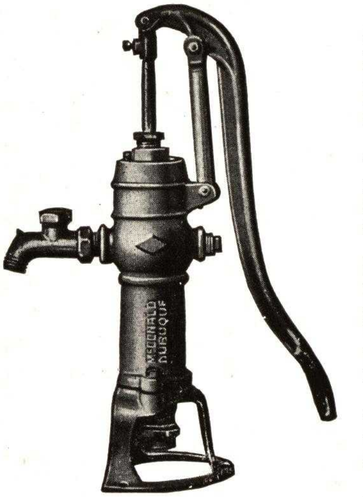
Complies fully with State Board of Health requirements.

Diameter of cylinder, 3 inches. Suction tapping, 1¼ inches; force outlet, ¾ inch.

Weight, 25 pounds.

Plain Iron	each	$3.70
Brass Lined	each	4.84
Brass Lined with Key City Sand Valve	each	5.20
Extra for Hose Connection, Including Gasket and Blind Washer	each	.32

Fig. 52 House Force Pumps



These are good, serviceable house force pumps for use on the kitchen sink and for forcing water to an elevated tank.

Has an iron spout threaded for 1-inch iron pipe and with thread for 1-inch hose coupling at the discharge end. **Cap** has **Brass Priming Plug. Back Outlet** threaded for 1-inch iron pipe. Handle can be placed in any position. **Piston Rod** is ⅝-inch brass-covered.

The **Bases** have brass valve seats and are threaded for 1¼-inch suction.

These pumps are made in either iron, brass-lined or brass body cylinders. The last is furnished polished or nickel-plated; when **Nickel-plated Cylinder** is ordered, the **Brass Body, Brass Piston Rod** and **Brass Stuffing Nut** are **Highly Polished** and **Nickel-plated**, the iron parts of the pump being neatly painted aluminum, making a most attractive pump.

In ordering state figure of pump and kind of cylinder.

Size No. 4. Size of cylinder, 3 inches.

Fig. **52**, Iron	each	$6.50
Fig. **52**, Brass-Lined	each	6.70
Fig. **52**, Polished Brass	each	8.55
Fig. **52**, Nickel-Plated Brass	each	8.80

Horizontal Double-acting Force Pumps

For Pressure or Open Storage Tanks

For Supplying Water from Shallow Wells and Cisterns not Over 25 Feet Deep

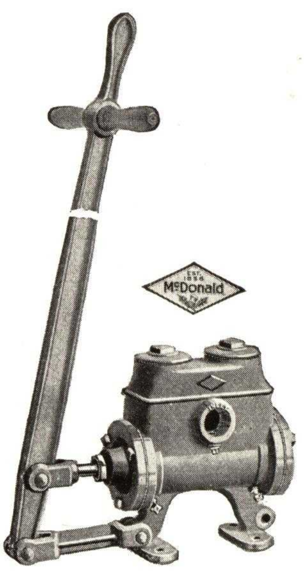


Fig. 46

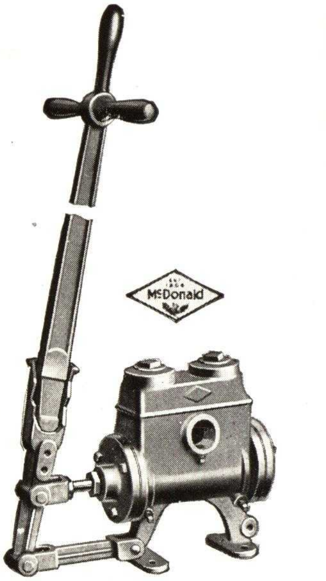


Fig. 46S

Above illustrations show two pumps which are exactly the same except as to the handles; Fig. 46 has a solid handle, while Fig. 46S has a removable handle. The two holes in the handle socket on Fig. 46S are for attachment of pump jack.

All 46 series pumps are brass lined and equipped with best quality plunger leathers, red brass valve seats and red brass valves ground to fit.

Because cylinder and plunger are below suction and discharge valves they are always primed ready for service.

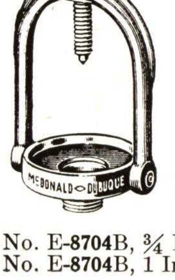
Handles can be placed at either end of pump by interchanging the cylinder heads.

When used on pressure tanks, remove the drainage plug under inlet or suction, and screw into the ¼-inch opening one of our intake air valves.

We recommend this **Intake Air Valve** for supplying air to pressure tanks.

No.		**2**	**4**	**6**
Fig. **46**, Brass Lined		**$13.88**	**$15.75**	**$17.63**
Fig. **46S**, Brass Lined		**14.63**	**16.50**	**18.38**
Diameter Cylinder	inches	2½	3	3½
Stroke	inches	4	4	4
Suction	inches	1¼	1¼	1½
Discharge	inches	1	1	1¼
Capacity Each Stroke	gallons	.085	.121	.166
Weight: Fig. **46**	pounds	46	48	55
Fig. **46S**	pounds	48	50	57

No. E-8704B McDonald Pump Spout Hose Clevises



A labor saver when filling a group of cans or other receptacles. Use of a hose avoids moving filled can away from pump to bring up empty cans to pump spout.

Made of brass. Can be readily attached to any pump.

Lower part or tailpiece is hinged to bale or arch so that it makes a tight joint with various angles of different pump spouts. Has extra large water way.

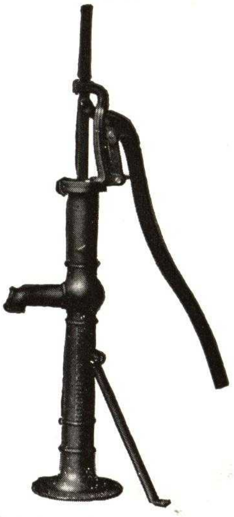
Brass thumb screw is fitted with hardened steel point, which bites into hook at top of spout, holding clevis in position.

Width arch, 3″; height arch, 4″. I.D. top of tailpiece, 2⅝″. Weight, 1⅝ lb.

No. E-8704B, ¾ Inch for ¾-Inch Hose Coupling	each	$.84
No. E-8704B, 1 Inch for 1-Inch Hose Coupling	each	.94

Windmill Lift Pump Standards

Fig. 705



A light windmill style lift pump, for use on wells 50 feet deep in connection with 3-inch and smaller cylinders. Windmill style has a tight top, preventing nails, stones, etc., from dropping into it. Regularly sent with short **Slide Rod,** but will be furnished with slide rod long enough for 6-inch stroke windmill at same price.

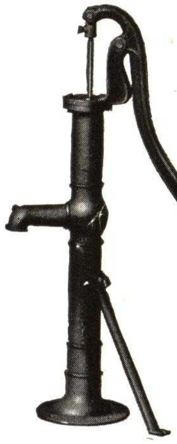
Flanged Cap is fastened to flanged top of standard by three strong machine bolts. **Slide Rod** is ⅜x1 inch, threaded at the lower end for 11/16-inch rod. **Cold Rolled Pins** 9/16 inch diameter connect cap, handle, and fulcrum. **Standard** is tapped for 1¼-inch pipe just above spout. **Flanged Top** of standard has six slots for the three cap bolts, permitting the handle to be placed in any desired position.

Price, Fig. **705** Standard, 6-inch Stroke..........each **$6.28**

Hand Lift Pump Standards

Flanged, Revolving, Open Cap

Fig. 706



A light open top hand pump, for wells up to 40 feet deep, with 3-inch and smaller cylinders.

Flanged Cap is rigid and fastened to the standard by three strong machine bolts. Open slot in cap permits oscillation of rod.

Pitman has set screw connection for ⅜ or 7/16-inch rod.

Standard has **Flanged Top** and six slots in flange permit the handle to be placed in any desired position. Tapped below spout for 1¼-inch pipe.

Cold Rolled Steel Pin 9/16 inch in diameter, connects cap and handle.

Without Rod, 6-Inch Stroke....................each **$6.05**

Windmill Lift Pump Standards

For Hand, Windmill or Jack

No. 710

A heavy pump, suitable for wells of practically any depth. Can be operated by hand, windmill or pump jack. **Standard** has flanged top with six slots to which the flanged cap is fastened, and is tapped for two-inch pipe just below the spout. A 2x1¼-inch bushing is sent with each pump for use with 1¼-inch pipe. **Stroke** is either six-inch or adjustable six and 10 inches. Adaptable for use on 2-inch tubular wells.

Caps are flanged and fastened by machine bolts to top of standard. Handle can be placed in any desired position. **Removable Chilled Boxes,** in the top and bottom of cap, take the wear of the slide rod off the cap.

Handle is capable of heavy duty, long and strong.

Fulcrums have extra wide base, to provide long bearing on the pin, preventing excessive wear and breakage.

Cold Rolled ⅝-in. Steel Pins connect cap, handle and fulcrum.

Slide Rods are ½x1 inch, threaded at the lower end for 7/16-inch rod, except on adjustable stroke pumps, when they are threaded for 7/16-inch rod and ⅜-inch pipe to fit ordinary wood rod coupling.

Regularly Fitted for 2-inch pipe with 2x1¼-inch bushing for use with 1¼-inch pipe. Six-inch stroke.

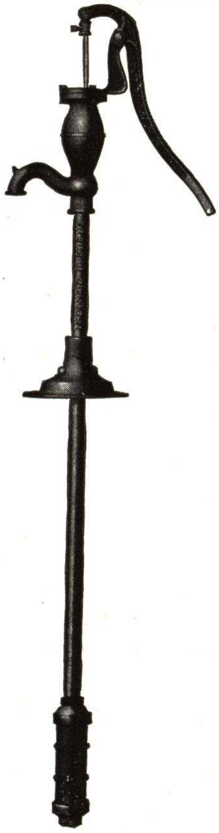
In ordering state length of stroke wanted.

	6-inch Stroke	Adj. Stroke
No. **710**........................each	.....	.....

Shallow Well Set-length Pumps

With Revolving Flanged Cap Rust Proof Bolts and Set Screws

Fig. 704SL



This pump is for shallow wells and cisterns. Has adjustable base and is anti-freezing. Good design and well proportioned; wearing parts strong and heavy. Cold rolled steel pins, connecting cap, handle and Pitman.

For use on drive wells, as the base can be raised or lowered after the cylinder is attached to the drive pipe.

Open Cap is flanged and is fastened to the flanged top of the stock by three machine bolts. Handle can be placed in any desired position.

Pitman with set screw makes a strong and convenient connection between the handle and rod.

Body or **Stock** is flanged at the top, and has a siphon spout. Tapped below spout for 1¼-inch pipe.

Split-grip Oval Base is strong and adjustable. Fastened by two strong bolts, and lugs on inner side hold pipe firmly to base.

Furnished with 3x10 cylinders, with high grade valve and plunger leathers. Iron cylinders sent unless otherwise specified.

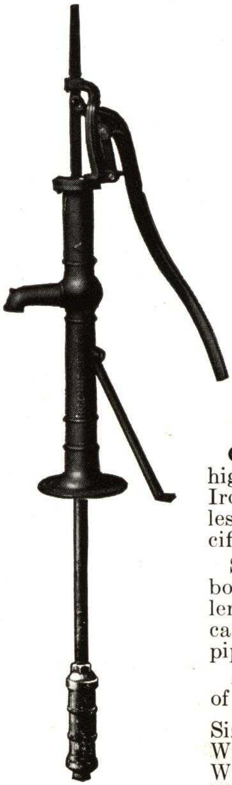
Set-lengths measure four feet from base to bottom of cylinder, but can be furnished longer if desired at an extra charge. Furnished with galvanized pipe. Six-inch stroke.

With Iron Cylinder......each	**$9.30**
With Brass Lined Cylinder.ea.	**12.20**
With Brass Body Cylinder.ea..	**12.75**

Shallow Well Set-length Pumps

Revolving Flanged Cap—Anti-freezing

Fig. 705SL



This pump is adaptable for shallow wells.

Slide Rods are not regularly sent long enough for windmill attachment, but will be sent long enough when so ordered.

Caps are flanged, and fastened to the **Flanged** top of standard by strong machine bolts. Handle can be placed in any desired position.

Forged Pins connect the cap, handle and fulcrum.

Stock is tapped just below the spout for 1¼-inch pipe. Three wood wedges are driven between the base of pump and pipe to hold pipe in position and prevent injury to the threaded joint near the spout.

Cylinder is regular 3x10 inches with high grade valve and plunger leathers. Iron cylinders are always sent unless brass lined or brass body are specified.

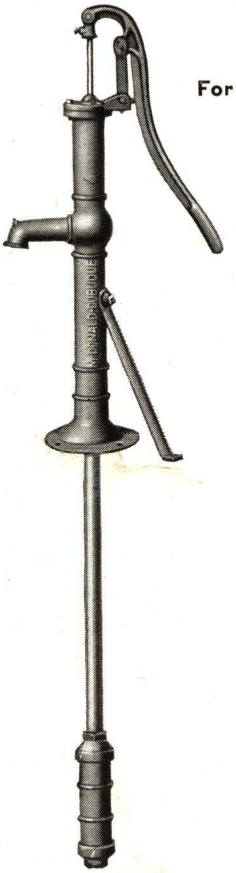
Set-lengths are four feet from base to bottom of cylinder. Regularly Set-lengths are made with **Black Pipe** but can also be furnished with galvanized pipe at an extra charge.

Always fitted for 1¼-inch pipe. Length of stroke, 6 inches.

Size Cylinder............inches	3x10
With Iron Cylinder........each	**$11.45**
With Brass-Lined Cylinder.each	**14.50**
With Brass Body Cylinder.each	**14.80**

No. 706SL McDonald Shallow Well Set Length Pumps

For Medium Duty—Sanitary Top



Suitable for operation in wells up to 50 feet deep.

For hand operation only.

Strong and durable stock with integral spout of ample proportions.

All caps flanged and bolted to standard with rust-proof bolts.

Standard provided with heavy cast brace.

Standard set is 4 feet from base to bottom of cylinder.

Can also be furnished with 6 or 8-foot set length at slight additional charge.

Regularly furnished with iron cylinder 3x10 inches, with high grade valve and plunger leather.

Standard equipment includes 1¼-inch galvanized pipe.

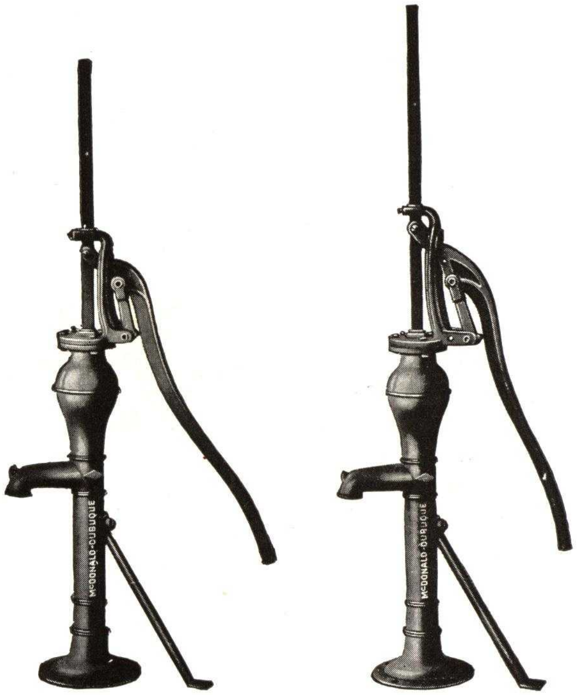
No.....................	706SL
With Iron Cylinder.each	**$10.85**
With Brass-Lined Cylinder.........each	**13.50**
With Brass Body Cylinder.........each	**14.10**
Stroke............inches	6
Suction Tapped...inches	1¼
Weight...........pounds	63

Heavy Lift Pump Standards

For Hand, Windmill or Pump Jack

Flanged Cap **Extra Large Spout**

Fig. 712



6-inch Stroke **Adjustable Stroke**

These illustrations show the heavy Globe Reservoir Windmill Lift Pumps with extra large spouts, in 6-inch and adjustable (6 and 10-inch) stroke. They are intended for stockyard purposes and other places where large cylinders, 4 inches and over in diameter are used, and are desirable because the extra large spout permits free discharge of water, while the globe reservoir above the spout prevents water rising too high in the stock above the spout. They are suitable for wells of almost any depth, 300 feet and over.

Standards have flanged tops, with 6 slots for bolts. Tapped just below the spout for 2-inch pipe, and a 2x1¼-inch bushing is sent with each pump for use with 1¼-inch pipe.

Flanged Caps have three bolt holes, and are fastened to the flanged top of the standard by three strong machine bolts, which are stronger than set screws, and permit handle to be placed in any desired position. **Chilled Guide Boxes,** in the top and bottom of cap, take the wear of the slide rod off the cap.

Cold Rolled steel pins, ⅝-inch in diameter, connect the caps, handles and fulcrums, and are superior to the common and smaller bolts and rivets generally used.

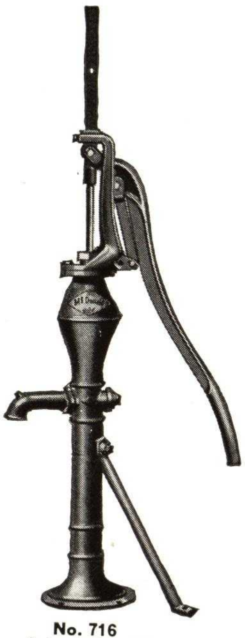
Handles are extra heavy and long. **Fulcrums** have extra wide base. **Slide Rods** are ½x1-inch, threaded at the lower end for 7/16-inch rod, except on adjustable stroke pumps, when they are threaded for 7/16-inch rod and ⅜-inch pipe to fit ordinary wood rod coupling.

Regularly Fitted:—2-inch well pipe with 2x1¼-inch bushing to adapt pump for 1¼-inch well pipe, and either with 6-inch stroke or adjustable stroke as ordered.

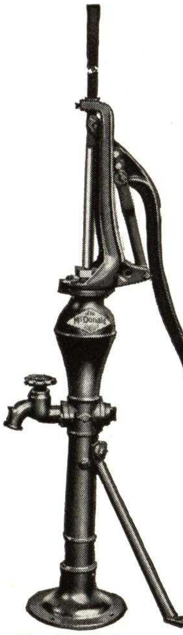
Price, Fig. **712**, 6-inch Stroke..................each	**$8.24**
" " **712**, Adjustable Stroke.............. "	**8.90**

McDonald Force Pump Standards

With Coupled or Solid Rod



No. 716
6-Inch Stroke



No. 716SRCS
Adjustable Stroke

Equipped with heavy duty flanged caps with high grade gasket and chilled replaceable guide cap boxes. All standards are recessed to receive 6-inch well casing.

Spouts are independent of standards. Available in either open or compression type, and are provided with ¼-inch turn connection to receive ¾-inch hose. All compression spouts have brass seat and swivel disc.

Piston rods on coupled type pumps made of 11/16-inch polished steel; on solid rod type pumps, 1 1/16-inch polished steel. Lower end of piston rod threaded for 7/16-inch rod and ⅜-inch iron pipe. Can be furnished with ⅝-inch box pin coupling.

Brass stuffing box with gland; extra large and deep.

Air tubes provide perfect seal for air chamber.

Cold rolled steel pins connect cap, handle and fulcrum.

Standards regularly tapped for 2-inch drop pipe with 2x1¼-inch bushing to adapt pump for 1¼-inch drop pipe.

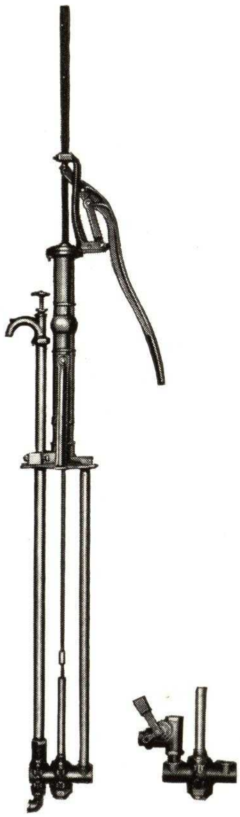
Back outlet tapping, 1¼ inches. Can be provided with 2-inch opening when so ordered.

Long stroke handle, perfectly balanced for comfortable grip and ease of operation.

No.	Stroke Inches	Type of Pump	Tapped Inches	Suction Weight Pounds
716	6	Coupled Rod—Plain Spout	2	78
716	Adjustable 6, 8 and 10	Coupled Rod—Plain Spout	2	87
716CS	6	Coupled Rod—Cock Spout	2	78
716CS	Adjustable 6, 8 and 10	Coupled Rod—Cock Spout	2	87
716SR	6	Solid Rod—Plain Spout	2	81
716SR	Adjustable 6, 8 and 10	Solid Rod—Plain Spout	2	84
716SRCS	6	Solid Rod—Cock Spout	2	83
716SRCS	Adjustable 6, 8 and 10	Solid Rod—Cock Spout	2	85

McDonald Jiffy Fix Underground Valve Force Pumps

For Operation by Hand, Windmill or Pump Jack
6 or 10-Inch Adjustable Stroke



Complete valve unit may be withdrawn by removal of two stud bolts permitting repairs above ground.

Bridge piece top tapped for 1¼-inch air chamber pipe and flanged to receive 1¼-inch heavy seamless brass twin leather packing tube, drop pipe, underground discharge and distribution valve connections.

Drop pipe tapped, 2 inches.

Underground discharge tapped, 1¼ inches.

Spout threaded for 1-inch hose coupling.

Goose neck type spout pipe with valve operating rod, valve wheel and brass packing nut at top; valve box and valve stem at bridge piece. Valve stem located close to bridge to prevent bending or twisting when excessive pressure is applied to valve wheel.

All working parts of distribution valve are brass, with seats at lower end of valve box and at underground discharge of bridge piece.

Plunger cup leathers are replaceable without removing bridge piece from well pipe. Coupling between ⅝-inch rod and plunger rod readily removable permitting 1x½-inch flat slide rod to turn in cap openings.

Caps, handles and fulcrums oversize and connected by ⅝-inch cold rolled steel pins instead of bolts or rivets.

Bridge regularly set 4 feet from base.

No. 768

With compression spout control and packing tube standard. Weight, 125 pounds.

No. 768SV

With speedy valve control. A pull up or a push down of the operating rod diverts the water from spout to underground discharge and vice versa. Brass bossed valve shaft carries circular leather discs which seat on wide faced replaceable brass valve seats. Spring loaded all brass check valve within the underground discharge connection eliminates the conventional horizontal check necessary in the discharge line. Weight, 127 pounds.

McDonald Water Conductors

McDONALD
DUBUQUE

No. E-8701, Standard

McDONALD
DUBUQUE

No. E-8702, Extra Large

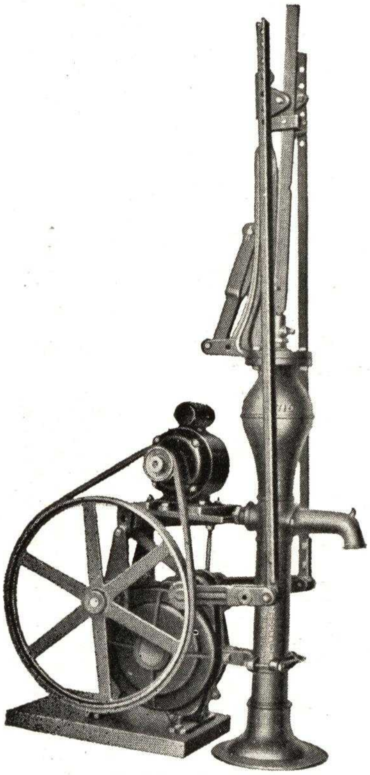
Extra large water conductor should be used with cylinders 3½ inches and larger in diameter.

Finished in black.

Furnished in the following pipe sizes: standard, 1¼, 1½, and 2 inches; extra large, 2 inches.

McDonald Super Oiled Power Pump Jacks

For Wells 300 Feet Deep or Less



Model JW

All gears and pinions are stub tooth, carefully machined for efficient, quiet operation and long life. Case hardened pins, rollers and eccentric arms reduce wear and effect smooth operation.

All vital moving parts are fully enclosed in a sealed oil bath; no chance for dirt, water or other foreign matter entering the gear housing to impair lubrication.

This sturdy jack has four adjustable strokes, direct vertical pump lift, and capacitor type motor. It is dust, sleet and rain proof, and is non-radio interfering.

The illustration shows a Model JW Pump Jack with capacitor type electric motor driving an adjustable stroke windmill head force pump.

Model JW

With Electric Motor

Model JW is a complete power plant for use with windmill head pumps. It is furnished with an electric motor, V belt drive; self contained and mounted on a substantial wood base. May be operated by a ¼, ⅓, ½ or ¾ hp. electric motor.

Shipping weight, 100 pounds.

Model JW....................................each ......

No. 2G

For Gas Engine Drive

Stroke is adjustable—4, 5, 6 or 7½ inches. Back geared 5 to 1. Standard pulley, 12 inches in diameter with a 2-inch face for flat belt drive.

Shipping weight, 110 pounds.

No. 2G....................................each ......

No. 2E

For Electric Motor Drive

Stroke is adjustable—4, 5, 6 or 7½ inches. Back geared 5 to 1. May be operated by a ¼, ⅓. ½ or ¾ hp. electric motor. Standard pulley, 18 inches in diameter with a 1¾-inch face.

Shipping weight, 125 pounds.

No. 2E....................................each ......

Capacities

6-Inch Stroke at 35 Strokes per Minute

Motor Hp.	50 Feet Total Lift Cyl. In.	Gph.	75 Feet Total Lift Cyl. In.	Gph.	100 Feet Total Lift Cyl. In.	Gph.	125 Feet Total Lift Cyl. In.	Gph.	150 Feet Total Lift Cyl. In.	Gph.
¼	3	385	2½	267	2¼	216	2	172	1¾	131
⅓	3½	524	3	385	2½	267	2¼	217	2¼	216
½	4¼	772	3¾	600	3¼	452	3	386	2½	267
¾	...	...	...	...	...	...	...	...	3	385

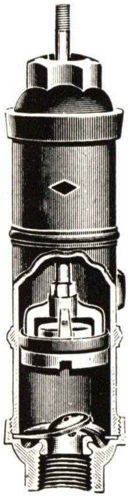
Motor Hp.	175 Feet Total Lift Cyl. In.	Gph.	200 Feet Total Lift Cyl. In.	Gph.	250 Feet Total Lift Cyl. In.	Gph.	300 Feet Total Lift Cyl. In.	Gph.
⅓	2	172	1¾	131	...	...	...	...
½	2½	267	2¼	216	...	...	...	...
¾	2¾	323	2½	267	2¼	216	2	171

Iron Pump Cylinders

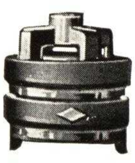
All Iron Plungers—Brass Valve Seats

No. 1, with High Grade Leather Check Valve

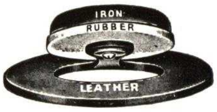
No. 2, with Key City Sand Valve



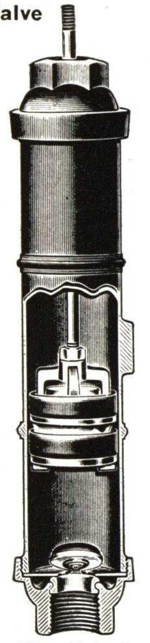
10-Inch Cylinder



Two-Leather Plunger



Key City Sand Valve



12 to 16-Inch Cylinder

Cylinder Body. Close grain cast iron, diamond bored and polished for accurate fit and hard service.

Caps. Extra heavy top and bottom caps of semi-steel.

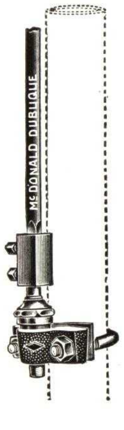
Plungers. All iron carefully finished, fitted with specially selected cup leather. One-leather plunger is standard equipment on cylinders with 10-inch shell. Two-leather plunger is standard on cylinders with 12-inch shell and longer.

Valve Seat. Brass; wide turned face.

Size Inches	Stroke Inches	Outside Diam. Inches	Length Overall Inches	Drop Pipe Inches	Plunger Rod Connection Inches	Approx. Weight Pounds
2½x10	6	3⁹⁄₁₆	14	1¼	⁷⁄₁₆	10
3 x10	6	4¹⁄₁₆	14	1¼	⁷⁄₁₆	12
3½x10	6	4⅝	14	1¼	⁷⁄₁₆	15
4 x10	6	5⅛	14	2	⁷⁄₁₆	20
2½x12	6	3⁹⁄₁₆	16	1¼	⁷⁄₁₆	11
3 x12	6	4¹⁄₁₆	16	1¼	⁷⁄₁₆	13½
3½x12	6	4⅝	16	1¼	⁷⁄₁₆	17
4 x12	6	5⅛	16	2	⁷⁄₁₆	21
2½x14	8	3⁹⁄₁₆	18	1¼	⁷⁄₁₆	12
3 x14	8	4¹⁄₁₆	18	1¼	⁷⁄₁₆	14½
3½x14	8	4⅝	18	1¼	⁷⁄₁₆	17½
4 x14	8	5⅛	18	2	⁷⁄₁₆	23
2½x16	10	3⁹⁄₁₆	20	1¼	⁷⁄₁₆	13
3 x16	10	4¹⁄₁₆	20	1¼	⁷⁄₁₆	15
3½x16	10	4⅝	20	1¼	⁷⁄₁₆	18
4 x16	10	5⅛	20	2	⁷⁄₁₆	24

McDonald Compression Frost Hole Valves

For Deep Well Pumps



Valve is clamped to pipe where the frost hole has been drilled, and a leather washer with the hole in it placed between the valve and pipe. Clamp is made of steel rod; valve is brass, will not rust or corrode.

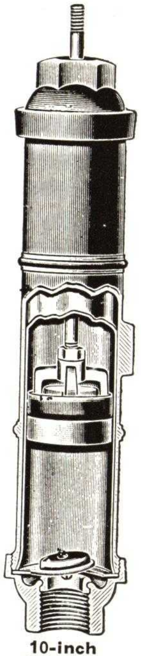
The valve opens and closes with a half turn to the right or left. Works easy. When a valve is open, the water wastes toward pipe, following it down the pipe, thus avoiding the water spurting out and washing down the side of the well.

Size Inches	Price Each	Size Inches	Price Each
1	**$1.50**	**1½**	**$2.00**
1¼	**1.50**	**2**	**2.00**

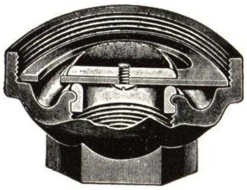
Brass-Lined Pump Cylinders

No. 12, with Brass Cage and Valve with Iron Follower Plunger and Leather Check Valve

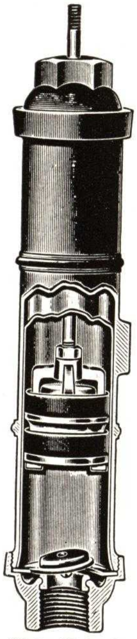
No. 13, with Brass Cage and Valve with All Brass Plunger and Leather Check Valve



10-inch Cylinder



Bottom Cap



12 to 20-inch Cylinder

Cylinder Body. Heavy close grain cast iron with heavy seamless brass liner.

Caps. Extra heavy; top and bottom caps of semi-steel.

Plungers. One-leather plunger standard on cylinders with 10-inch shell. Two-leather plunger standard on cylinders with 12-inch shell and longer.

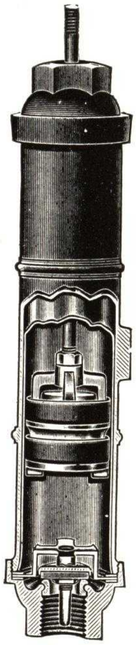
Valve Seats. Brass; wide turned face.

Size Inches	Stroke Inches	Outside Diam. Inches	Length Overall Inches	Drop Pipe Inches	Plunger Rod Connection Inches	Approx. Weight Pounds
3 x10	6	4 1/16	14	1 1/4	7/16	12 1/2
3 1/2x10	6	4 5/8	14	1 1/4	7/16	15
4 x10	6	5 1/8	14	2	7/16	19 1/2
2 x12	6	3 1/16	16	1 1/4	7/16	10 1/2
2 1/4x12	6	3 5/16	16	1 1/4	7/16	11
2 1/2x12	6	3 9/16	16	1 1/4	7/16	12
2 3/4x12	6	3 13/16	16	1 1/4	7/16	13
3 x12	6	4 1/16	16	1 1/4	7/16	14
3 1/2x12	6	4 5/8	16	1 1/4	7/16	17 1/2
4 x12	6	5 1/8	16	2	7/16	22
2 x14	8	3 1/16	18	1 1/4	7/16	11
2 1/4x14	8	3 5/16	18	1 1/4	7/16	11 1/2
2 1/2x14	8	3 9/16	18	1 1/4	7/16	12 1/2
2 3/4x14	8	3 13/16	18	1 1/4	7/16	14
3 x14	8	4 1/16	18	1 1/4	7/16	15
3 1/2x14	8	4 5/8	18	1 1/4	7/16	19
4 x14	8	5 1/8	18	2	7/16	23
2 x16	10	3 1/16	19 3/4	1 1/4	7/16	12
2 1/4x16	10	3 5/16	19 3/4	1 1/4	7/16	13
2 1/2x16	10	3 9/16	19 3/4	1 1/4	7/16	14
2 3/4x16	10	3 13/16	19 3/4	1 1/4	7/16	16
3 x16	10	4 1/16	19 3/4	1 1/4	7/16	16 1/2
3 1/2x16	10	4 5/8	19 3/4	1 1/4	7/16	21
4 x16	10	5 1/8	19 3/4	2	7/16	26
2 x18	12	3 1/16	21 3/4	1 1/4	7/16	12 1/2
2 1/4x18	12	3 5/16	21 3/4	1 1/4	7/16	13 1/2
2 1/2x18	12	3 9/16	21 3/4	1 1/4	7/16	15
2 3/4x18	12	3 13/16	21 3/4	1 1/4	7/16	17
3 x18	12	4 1/16	21 3/4	1 1/4	7/16	18 1/2
2 x20	14	3 1/16	23 3/4	1 1/4	7/16	13
2 1/4x20	14	3 5/16	23 3/4	1 1/4	7/16	15
2 1/2x20	14	3 9/16	23 3/4	1 1/4	7/16	16 1/2
2 3/4x20	14	3 13/16	23 3/4	1 1/4	7/16	18 1/2
3 x20	14	4 1/16	23 3/4	1 1/4	7/16	20

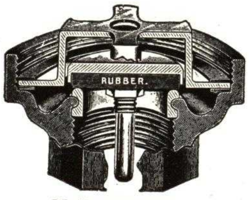
Brass Lined Pump Cylinders

No. 17, with McDonald Patent Valve, Brass Cage and Poppet with Molded Rubber Disc Recessed in Poppet

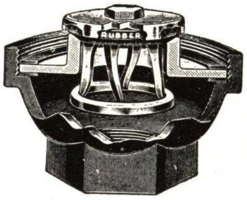
No. 21, with Iowa Bevel Seat Check Valve



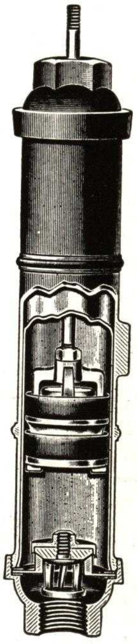
No. 17



McDonald Brass Patent Valve



Iowa Bevel Seat Check Valve



No. 21

Cylinder Body. Heavy close grained cast iron with heavy seamless brass liner.

Caps. Extra heavy, top and bottom caps of semi-steel.

Plungers. No. 17 cylinder regularly equipped with all brass plunger. No. 21 cylinder with 10-inch shell equipped with all brass, one-leather plunger with beveled rubber faced plunger poppet. No. 21 cylinder with 12-inch shell and longer equipped with all brass, two-leather plungers with beveled rubber faced plunger poppet.

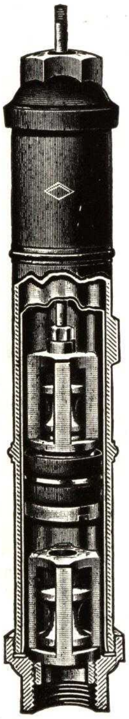
Valve Seat. No. 17, brass; wide turned face. No. 21, brass; wide, accurately machined beveled face.

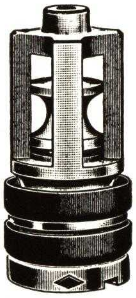
Size Inches	Stroke Inches	Outside Diameter Inches	Length Overall Inches	Drop Pipe Inches	Plunger Rod Connection Inches	Approx. Weight Pounds
3 x10	6	4 1/16	14 3/4	1 1/4	7/16	13
3 1/2x10	6	4 5/8	14 3/4	1 1/4	7/16	16
4 x10	6	5 1/8	14 3/4	2	7/16	21
2 x12	6	3 1/16	16	1 1/4	7/16	10 1/2
2 1/4x12	6	3 5/16	16	1 1/4	7/16	11
2 1/2x12	6	3 9/16	16	1 1/4	7/16	11 1/2
2 3/4x12	6	3 13/16	16	1 1/4	7/16	13
3 x12	6	4 1/16	16	1 1/4	7/16	14 1/2
3 1/2x12	6	4 5/8	16	1 1/4	7/16	17 1/2
4 x12	6	5 1/8	16	2	7/16	22 1/2
2 x14	8	3 1/16	18	1 1/4	7/16	11
2 1/4x14	8	3 5/16	18	1 1/4	7/16	11 1/2
2 1/2x14	8	3 9/16	18	1 1/4	7/16	12 1/2
2 3/4x14	8	3 13/16	18	1 1/4	7/16	14
3 x14	8	4 1/16	18	1 1/4	7/16	15 1/2
3 1/2x14	8	4 5/8	18	1 1/4	7/16	20
4 x14	8	5 1/8	18	2	7/16	24
2 x16	10	3 1/16	20	1 1/4	7/16	12
2 1/4x16	10	3 5/16	20	1 1/4	7/16	13 1/2
2 1/2x16	10	3 9/16	20	1 1/4	7/16	14
2 3/4x16	10	3 13/16	20	1 1/4	7/16	15 1/2
3 x16	10	4 1/16	20	1 1/4	7/16	16
3 1/2x16	10	4 5/8	20	1 1/4	7/16	21 1/2
4 x16	10	5 1/8	20	2	7/16	27 1/2

Brass Lined Pump Cylinders

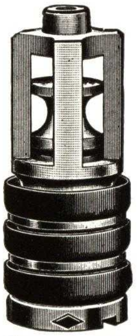
With Brass Spool Poppet Check Valves

Two or Three-Leather All Brass Plungers with Leather Faced Brass Spool Poppets

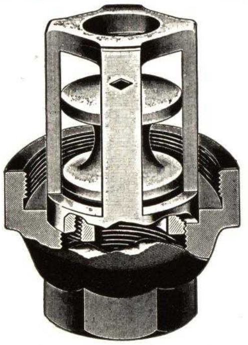




Two-Leather Plunger



Three-Leather Plunger



Brass Spool Poppet Check Valve

These are high grade cylinders for heavy duty. All the working parts are brass and will not rust or corrode. All cylinders have brass valve seats.

The brass spool poppets, in both plungers and check valves, are faced with leather and rest on brass seats. Cages of plungers and check valves are extra heavy and strong, and are suitable for the deepest of wells.

Brass lined cylinders with two-leather brass plungers with brass spool poppets and brass spool check valves will be designated No. **136-2.**

Brass lined cylinders with three-leather brass plungers with brass spool poppets and brass spool check valves will be designated No. **136-3.**

In ordering brass lined cylinders with spool poppet plungers and check valves, specify kind of plunger wanted by number.

Length of stroke, as shown below, is about two inches less than the maximum stroke.

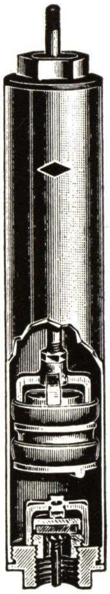
Size Inches	No. 136-2 Each	Stroke Inches	No. 136-3 Each	Stroke Inches
2 x16	**$10.50**	8	. . . . .	. .
2¼x16	**11.25**	8	. . . . .	. .
2½x16	**11.75**	6	. . . . .	. .
2¾x16	**12.25**	6	. . . . .	. .
3 x16	**12.75**	6	. . . . .	. .
2 x18	**11.00**	10	**$11.00**	9
2¼x18	**12.00**	10	**12.00**	9
2½x18	**12.75**	8	**12.75**	7
2¾x18	**13.25**	8	**13.25**	7
3 x18	**13.75**	8	**13.75**	7
2 x20	**11.50**	12	**11.50**	11
2¼x20	**12.75**	12	**12.75**	11
2½x20	**13.50**	10	**13.50**	9
2¾x20	**14.25**	10	**14.25**	9
3 x20	**14.75**	10	**14.75**	9

Brass Body Pump Cylinders

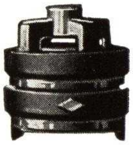
With Iron Flush Caps

No. 56, with All Brass Two-Leather Poppet Type Plunger and McDonald Brass Patent Valve

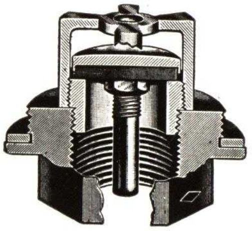
No. 56BF, with All Brass Two-Leather Plunger with Beveled Face Rubber Plunger Poppet and Iowa Beveled Seat Flush Cap



Brass Body Cylinder Flush Cap



Two-Leather Plunger



McDonald Brass Patent Valve

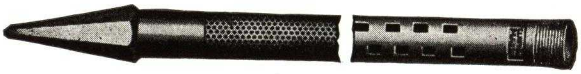
Cylinder Body. Heavy seamless brass.

Caps. Extra heavy semi-steel.

Valve Seats. Brass; wide accurately machined face.

Size Inches	Stroke Inches	Outside Diameter Inches	Length Overall Inches	Drop Pipe Inches	Plunger Rod Connection Inches	Approx. Weight Pounds
2 x14	7	2¼	17	1¼	7/16	7
2¼x14	7	2½	17	1¼	7/16	8
2½x14	7	2¾	17	1¼	7/16	10
2¾x14	7	3	17	1¼	7/16	11
3 x14	7	3¼	17	1¼	7/16	12
3½x14	7	3¾	17	1¼	7/16	15
4 x14	7	4¼	17	2	7/16	17½
2 x16	9	2¼	19	1¼	7/16	7½
2¼x16	9	2½	19	1¼	7/16	9
2½x16	9	2¾	19	1¼	7/16	10½
2¾x16	9	3	19	1¼	7/16	11½
3 x16	9	3¼	19	1¼	7/16	12½
3½x16	9	3¾	19	1¼	7/16	15½
4 x16	9	4¼	19	2	7/16	18½
2 x18	11	2¼	21	1¼	7/16	7
2¼x18	11	2½	21	1¼	7/16	8½
2½x18	11	2¾	21	1¼	7/16	9½
2¾x18	11	3	21	1¼	7/16	11½
3 x18	11	3¼	21	1¼	7/16	12½
2 x20	13	2¼	23	1¼	7/16	7½
2¼x20	13	2½	23	1¼	7/16	8½
2½x20	13	2¾	23	1¼	7/16	10
2¾x20	13	3	23	1¼	7/16	12
3 x20	13	3¼	23	1¼	7/16	13
2½x24	17	2¾	27	1¼	7/16	11
2¾x24	17	3	27	1¼	7/16	13
3 x24	17	3¼	27	1¼	7/16	14

Clayton Mark Brass Jacket Drive Well Points



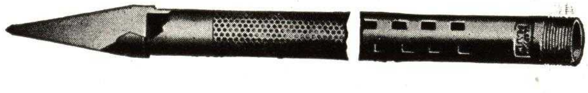
A one-piece forged steel drive well point recommended for use in sand and fine gravel. Perforated with rectangular holes. Galvanized by hot-dip process after forging and punching.

Jacket made of brass wire cloth and perforated sheet brass securely soldered to point body.

Maximum inlet area and driving strength.

No.	Gauze No.					Add for Wire Netting Each	Inside Diam. In.	Nom. Lgth. of Point In.	Nom. Lgth. of Jacket In.	Approx. Wt. Lb.
	40–50 and 60 Each	20–30 and 70 Each	80 Each	90 Each	100 Each					
74	$3.02	$3.63	$4.12	$4.67	$5.55	$.60	1	24	18	4¼
76	3.79	4.45	5.00	5.77	7.04	.60	1	30	24	5¼
78	4.62	5.33	5.94	6.82	8.47	.71	1	36	30	6¼
80	5.39	6.16	6.82	7.92	9.90	.71	1	42	36	7¼
82	6.16	7.04	7.75	9.02	11.38	.77	1	48	42	8¼
84	6.98	7.86	8.63	10.12	12.81	.77	1	54	48	9¼
84½	7.75	8.69	9.57	11.22	14.30	.77	1	60	54	10¼
85	8.52	9.57	10.45	12.26	15.73	.93	1	66	60	11¼
85½	9.29	10.39	11.38	13.36	17.16	.93	1	72	66	12¼
86	2.09	2.53	2.97	3.52	4.45	.55	1¼	20	14	6
90	2.53	3.02	3.74	4.29	5.50	.55	1¼	24	18	6¾
94	3.19	3.79	4.51	5.28	6.93	.55	1¼	30	24	8
98	3.90	4.56	5.28	6.27	8.36	.66	1¼	36	30	9¼
100	4.62	5.33	6.05	7.26	9.79	.66	1¼	42	36	10½
102	5.28	6.10	6.82	8.25	11.22	.71	1¼	48	42	11¾
106	5.99	6.87	7.59	9.24	12.65	.71	1¼	54	48	13
110	6.65	7.64	8.36	10.23	14.08	.71	1¼	60	54	14¼
112	7.37	8.41	9.13	11.22	15.51	.82	1¼	66	60	15¼
114	8.08	9.18	9.90	12.21	16.94	.82	1¼	72	66	16½
114½	8.80	9.95	10.67	13.20	18.37	.88	1¼	78	72	17¾
136	4.29	5.17	5.88	7.04	8.47	.77	1½	24	18	7¼
140	5.39	6.38	7.20	8.63	10.67	.77	1½	30	24	8¾
144	6.49	7.59	8.52	10.28	12.76	.93	1½	36	30	10¼
146	7.59	8.80	9.84	11.93	14.90	.93	1½	42	36	11¾
148	8.63	10.01	11.22	13.53	16.99	1.10	1½	48	42	13¼
150	9.73	11.22	12.54	15.18	19.14	1.10	1½	54	48	14¾
152	10.83	12.43	13.86	16.83	21.23	1.10	1½	60	54	16¼
154	11.93	13.64	15.18	18.48	23.37	1.26	1½	66	60	17¾
156	13.03	14.85	16.50	20.07	25.46	1.26	1½	72	66	19¼
160	6.76	7.75	8.47	9.84	11.60	1.10	2	24	18	10½
164	8.08	9.18	10.12	11.99	14.35	1.10	2	30	24	12½
168	9.46	10.67	11.71	13.86	17.05	1.26	2	36	30	14½
170	10.78	12.10	13.36	15.84	19.80	1.26	2	42	36	16½
172	12.10	13.53	15.01	17.87	22.49	1.43	2	48	42	18½
174	13.53	15.01	16.66	19.85	25.24	1.43	2	54	48	20½
176	14.90	16.44	18.26	21.83	27.94	1.43	2	60	54	22½
178	16.22	17.93	19.91	23.81	30.69	1.65	2	66	60	24½
180	17.54	19.36	21.56	25.85	33.38	1.65	2	72	66	26½
180½	18.86	20.79	23.15	27.83	36.13	1.81	2	78	72	28½
182	20.18	22.27	24.80	29.81	38.83	1.81	2	84	78	30½
182½	21.56	23.70	26.45	31.84	41.58	1.98	2	90	84	32½
183½	22.88	25.19	28.05	33.82	44.27	1.98	2	96	90	34½
183	13.97	15.73	17.54	19.80	22.49	1.43	2½	30	24	18¾
184	16.22	18.48	20.68	23.43	27.00	1.65	2½	36	30	21½
188	20.73	23.81	27.00	30.69	36.02	1.98	2½	48	42	27
192	25.30	29.26	33.27	37.95	44.99	2.53	2½	60	54	32½
196	29.81	34.70	39.54	45.21	54.01	2.91	2½	72	66	38
197	34.37	40.15	45.87	52.47	63.03	3.46	2½	84	78	43½
199	38.88	45.59	52.14	59.73	72.05	3.79	2½	96	90	49
200	21.56	24.80	27.88	30.63	36.90	2.20	3	36	30	29½
204	27.00	31.07	35.09	38.72	46.80	2.75	3	48	42	35¾
208	32.45	37.40	42.29	46.80	56.76	3.30	3	60	54	43
212	37.89	43.67	49.50	54.94	66.66	3.85	3	72	66	48¼
214	43.34	49.99	56.70	63.03	76.61	4.40	3	84	78	52½
215	48.78	56.26	63.91	71.17	86.51	4.95	3	96	90	60¾
202	27.00	31.07	35.09	38.72	46.86	2.75	3½	36	30	41½
206	32.45	37.40	42.29	46.80	56.81	3.30	3½	48	42	50½
210	37.89	43.67	49.50	54.94	66.66	3.85	3½	60	54	59½
213	43.34	49.99	56.70	63.03	76.56	4.40	3½	72	60	68½
218	48.78	56.26	63.91	71.17	86.40	5.06	3½	84	72	77½
219	54.23	62.53	71.11	79.25	96.25	5.77	3½	96	84	86½
216	43.25	46.82	50.40	54.03	63.04	4.35	4	48	36	56¼
220	56.74	62.55	68.43	75.62	90.02	5.75	4	72	60	76½
224	70.24	78.28	86.46	97.22	117.00	7.08	4	96	84	96¾
228	83.73	94.01	104.48	118.82	143.99	8.47	4	120	108	117

Clayton Mark Flush or Tubular Well Points



One-piece forged steel galvanized body perforated with rectangular holes. Points are galvanized by hot dip process after forging and punching.

Jacket made of brass wire cloth and perforated sheet brass securely soldered to point body.

Maximum inlet area and driving strength.

Inside driving will not damage point.

1-Inch Inside Diameter

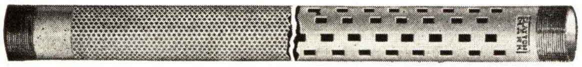
No.	Gauze No.					Add for Wire Netting Each	Nom. Lgth. of Point In.	Nom. Lgth. of Jacket In.	Approx. Wt. Lb.
	40–50 and 60 Each	20–30 and 70 Each	80 Each	90 Each	100 Each				
73	$3.02	$3.63	$4.01	$4.45	$4.95	$.60	30	18	5
75	3.41	4.01	4.34	4.84	5.33	.60	36	18	5¾
75½	3.85	4.45	4.84	5.39	6.27	.60	36	24	6
77	4.23	4.84	5.22	5.77	6.65	.60	42	24	6¾
77½	4.73	5.33	5.66	6.27	7.64	.71	42	30	7
79	5.06	5.66	6.05	6.65	7.97	.71	48	30	7¾
79½	5.55	6.16	6.54	7.20	8.96	.71	48	36	8
81	5.94	6.54	6.87	7.59	9.29	.71	54	36	8¾
81½	6.43	7.04	7.37	8.08	10.28	.77	54	42	9
83	6.76	7.37	7.75	8.47	10.67	.77	60	42	9¾

1¼-Inch Inside Diameter

116	$2.53	$3.02	$3.74	$4.29	$5.50	$.55	24	18	6¾
117	2.86	3.35	4.07	4.62	5.83	.55	30	18	7¾
117½	3.19	3.79	4.51	5.28	6.93	.55	30	24	8
118	3.52	4.12	4.84	5.61	7.26	.55	36	24	9
119	3.85	4.45	5.17	5.94	7.59	.55	42	24	10
120	4.18	4.78	5.50	6.27	7.92	.55	48	24	11
121	3.90	4.56	5.28	6.27	8.36	.66	36	30	9¼
122	4.23	4.89	5.61	6.60	8.69	.66	42	30	10¼
123	4.56	5.22	5.94	6.93	9.02	.66	48	30	11¼
124	4.89	5.55	6.27	7.26	9.35	.66	54	30	12¼
125	4.62	5.33	6.02	7.26	9.79	.66	42	36	10½
126	4.95	5.66	6.38	7.59	10.12	.66	48	36	11½
127	5.28	5.99	6.71	7.92	10.45	.66	54	36	12½
128	5.61	6.32	7.04	8.25	10.78	.66	60	36	13½
129	5.28	6.10	6.82	8.25	11.22	.71	48	42	11¾
130	5.61	6.43	7.15	8.58	11.55	.71	54	42	12¾
130½	5.94	6.76	7.48	8.91	11.88	.71	60	42	13¾
131	6.27	7.09	7.81	9.24	12.21	.71	66	42	14¾
131½	5.99	6.87	7.59	9.24	12.65	.71	54	48	13
132	6.32	7.20	7.92	9.57	12.98	.71	60	48	14
133	6.65	7.53	8.25	9.90	13.31	.71	66	48	15
135	6.98	7.86	8.58	10.23	13.64	.71	72	48	16
570	6.65	7.64	8.36	10.23	14.08	.71	60	54	14¼
571	6.98	7.97	8.69	10.56	14.41	.71	66	54	15¼
572	7.31	8.30	9.02	10.89	14.74	.71	72	54	16¼
573	7.37	8.41	9.13	11.22	15.51	.82	66	60	15¼
574	7.70	8.74	9.46	11.55	15.84	.82	72	60	16¼
575	8.03	9.07	9.79	11.88	16.17	.82	78	60	17½
576	8.08	9.18	9.90	12.21	16.94	.82	72	66	16½
577	8.41	9.51	10.23	12.54	17.27	.82	78	66	17½
578	8.74	9.84	10.56	12.87	17.60	.82	84	66	18½
579	8.80	9.95	10.67	13.20	18.37	.88	78	72	17¾
580	9.13	10.28	11.00	13.53	18.70	.88	84	72	18¾
581	9.46	10.61	11.33	13.86	19.03	.88	90	72	19¾
582	9.51	10.72	11.44	14.19	19.80	.99	84	78	19
583	9.84	11.05	11.77	14.52	20.13	.99	90	78	20
584	10.17	11.38	12.10	14.85	20.46	.99	96	78	21

Diameters and lengths not listed will be furnished at proportionate prices. Please order by number, stating mesh of gauze.

Clayton Mark Open End or Well Point Extensions



An extension with rectangular holes, made of steel pipe, perforated and galvanized. Covered with gauze under perforated sheet brass, securely soldered at seam and around pipe at each end of jacket.

Can also be furnished with single jacket of perforated sheet brass, Nos. 1, 2, 3, 4, 6 and 8 at 60-gauze prices, and No. 21 perforation at 80-gauze prices.

Open end extension with wire netting under jacket will be furnished at extra cost.

Each strainer is separately wrapped with an outside label showing size, number and gauze mesh.

Order by number, stating mesh of gauze.

1¼-Inch Inside Diameter

No.	40, 50 & 60 Gauze Each	20, 30 & 70 Gauze Each	80 Gauze Each	90 Gauze Each	100 Gauze Each	Add for Wire Netting Each	Lgth. of Point In.	Lgth. of Jacket In.	Approx. Wt. Lb. Each
91	$2.53	$3.02	$3.74	$4.29	$5.50	$.55	24	18	5
95	3.19	3.79	4.51	5.28	6.93	.55	30	24	6¼
99	3.90	4.56	5.28	6.27	8.36	.66	36	30	7½
101	4.62	5.33	6.05	7.26	9.79	.66	42	36	8¾
103	5.28	6.10	6.82	8.25	11.22	.71	48	42	10
107	5.99	6.87	7.59	9.24	12.65	.71	54	48	11¼
111	6.65	7.64	8.36	10.23	14.08	.71	60	54	12½

1½-Inch Inside Diameter

134	$4.29	$5.17	$5.88	$7.04	$8.47	$.77	24	18	5¼
141	5.39	6.38	7.20	8.63	10.67	.77	30	24	6¾
145	6.49	7.59	8.52	10.28	12.76	.93	36	30	8¼
147	7.59	8.80	9.84	11.93	14.90	.93	42	36	9¾
149	8.63	10.01	11.22	13.53	16.99	1.10	48	42	11¼
151	9.73	11.22	12.54	15.18	19.14	1.10	54	48	12¾
153	10.83	12.43	13.86	16.83	21.23	1.10	60	54	14¼
155	11.93	13.64	15.18	18.48	23.37	1.26	66	60	15¾
157	13.03	14.85	16.50	20.07	25.46	1.26	72	66	17¼

2-Inch Inside Diameter

161	$6.76	$7.75	$8.47	$9.84	$11.60	$1.10	24	18	7½
165	8.08	9.18	10.12	11.88	14.35	1.10	30	24	9½
169	9.46	10.67	11.71	13.86	17.05	1.26	36	30	11½
171	10.78	12.10	13.36	15.84	19.80	1.26	42	36	13½
173	12.10	13.53	15.01	17.87	22.49	1.43	48	42	15½
175	13.53	15.01	16.66	19.85	25.24	1.43	54	48	17½
177	14.90	16.44	18.26	21.83	27.94	1.43	60	54	19½
179	16.22	17.93	19.91	23.81	30.69	1.65	66	60	21½
181	17.54	19.36	21.56	25.85	33.38	1.65	72	66	23½

2½-Inch Inside Diameter

185	$16.22	$18.48	$20.68	$23.43	$27.00	$1.65	36	30	16¼
189	20.73	23.81	27.00	30.69	36.02	1.98	48	42	21¾
191	25.30	29.26	33.27	37.95	44.99	2.53	60	54	27¾
193	29.81	34.70	39.54	45.21	54.01	2.91	72	66	32¾

3-Inch Inside Diameter

201	$21.56	$24.80	$27.88	$30.63	$36.90	$2.20	36	30	22¾
205	27.00	31.07	35.09	38.72	46.80	2.75	48	42	29
209	32.45	37.40	42.29	46.80	56.76	3.30	60	54	35¼

3½-Inch Inside Diameter

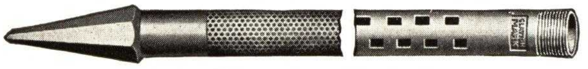
203	$27.00	$31.07	$35.09	$38.72	$46.80	$2.75	36	30	25½
207	32.45	37.40	42.29	46.80	56.81	3.30	48	42	34½
211	37.89	43.67	49.50	54.94	66.66	3.85	60	54	43½
231	43.34	49.99	56.70	63.03	76.56	4.34	72	66	52½

4-Inch Inside Diameter

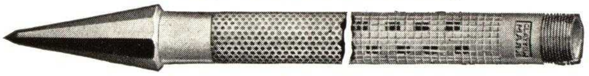
217	$43.25	$46.82	$50.40	$54.03	$63.04	$4.35	48	36	42¼
221	56.74	62.55	68.43	75.62	90.02	5.75	72	60	62½
225	70.24	78.28	86.46	97.22	117.00	7.08	96	84	82¾
229	83.73	94.01	104.48	118.82	143.99	8.47	120	108	103

Clayton Mark Single-Screen Drive Well Points

One-Piece Forged Steel, Galvanized



Without ¼-Inch Mesh Wire Netting



With ¼-Inch Mesh Wire Netting

These points are adapted for use in coarse sand and gravel. Points with wire netting under jacket are recommended where driving is not severe, as the wire netting holds the perforated jacket away from the body and allows a greater flow of water through all of the openings.

Forged in one piece; sand leaks and crooked driving are eliminated. Points are galvanized after punching the full length of the point including the tapered driving end. Rectangular holes are punched in pipe section, making more inflow capacity through the same number of rectangular holes than through elliptic holes of the same width and length. However, driving strength of pipe is not reduced.

The jacket of perforated sheet brass (no gauze underneath) is securely soldered to the skeleton point and is furnished in Nos. 1, 2, 3, 4, 6, or No. 21. No. 1 same as 60 mesh; No. 2 same as 50 mesh; No. 3 same as 40 mesh; No. 21 same as 50 mesh. No. 6 has .079-inch openings. No. 21 has slotted perforations about ⅛ inch long and 1/64 inch wide.

Single-screen points can be furnished with flush points at same lists.

Each point is separately wrapped with an outside label showing size, number, and gauze mesh.

Order by number, stating perforation number.

1-Inch Inside Diameter

No.	Perforated Jacket Nos. 1, 2 3, 4, and 6 Each	Perforated Jacket No. 21 Each	Add for Wire Netting Each	Length of Point Inches	Length of Jacket Inches	Approx. Net Wt., Lb. Each
740	$2.42	$3.63	$.60	20	14	3½
741	3.02	4.12	.60	24	18	4
742	3.79	5.00	.60	30	24	5
743	4.62	5.94	.71	36	30	6
744	5.39	6.82	.71	42	36	7
745	6.16	7.75	.77	48	42	8
746	6.98	8.63	.77	54	48	8¾
747	7.75	9.57	.77	60	54	9¾
748	8.52	10.45	.93	66	60	10¾
749	9.29	11.38	.93	72	66	11½

1¼-Inch Inside Diameter

750	$2.09	$2.97	$.55	20	14	5¾
751	2.53	3.74	.55	24	18	6½
752	3.19	4.51	.55	30	24	7¾
753	3.90	5.28	.66	36	30	9
754	4.62	6.05	.66	42	36	10
755	5.28	6.82	.71	48	42	11¼
756	5.99	7.59	.71	54	48	12½
757	6.65	8.36	.71	60	54	13½
758	7.37	9.13	.82	66	60	14½
759	8.08	9.90	.82	72	66	15¾

1½-Inch Inside Diameter

760	$4.29	$5.88	$.77	24	18	7
761	5.39	7.20	.77	30	24	8½
762	6.49	8.52	.93	36	30	9¾
763	7.59	9.90	.93	42	36	11¼
764	8.69	11.22	1.10	48	42	12½
765	9.73	12.54	1.10	54	48	14
766	10.83	13.86	1.10	60	54	15½
767	11.93	15.18	1.26	66	60	17
768	13.03	16.50	1.26	72	66	18½

2-Inch Inside Diameter

770	$6.76	$8.47	$1.10	24	18	10
771	8.08	10.12	1.10	30	24	12
772	9.46	11.71	1.26	36	30	14
773	10.78	13.36	1.26	42	36	15¾
774	12.10	15.01	1.43	48	42	17¾
775	13.53	16.66	1.43	54	48	19½
776	14.85	18.26	1.43	60	54	21½
777	16.22	19.91	1.65	66	60	23½
778	17.54	21.56	1.65	72	66	25¼

Clayton Mark Peerless Flush or Tubular Well Points

Seamless Brass Tube Strainer Jacket

The 1-inch size will enter a 2-inch well; 1¼-inch, a 2½-inch; 1½-inch, a 3-inch; 2-inch, a 4-inch well.

1-Inch Inside Diameter

No.	Length Point Inches	Nom. Lgth. Jacket Inches	Approx. Weight Pounds	Each
1301	30	18	5½	**$3.57**
1302	36	18	6¼	**4.01**
1303	36	24	6½	**4.40**
1304	42	24	7¾	**4.84**
1305	42	30	7½	**5.28**
1306	48	30	8¼	**5.66**
1307	48	36	8½	**6.10**
1308	54	36	9¼	**6.54**
1309	54	42	9¾	**6.98**
1310	60	42	10½	**7.37**

1¼-Inch Inside Diameter

No.	Length Point Inches	Nom. Lgth. Jacket Inches	Approx. Weight Pounds	Each
1311	24	18	7¾	**$4.23**
1312	30	18	8¾	**4.62**
1313	30	24	9¼	**5.33**
1314	36	24	10¼	**5.66**
1315	42	24	11¼	**6.05**
1316	48	24	12¼	**6.43**
1317	36	30	10¾	**6.43**
1318	42	30	11¾	**6.76**
1319	48	30	12¾	**7.15**
1320	54	30	13¾	**7.42**
1321	42	36	12¼	**7.42**
1322	48	36	13¼	**7.81**
1323	54	36	14¼	**8.14**
1324	60	36	15¼	**8.52**
1325	48	42	13¾	**8.52**
1326	54	42	14¾	**8.91**
1327	60	42	15¾	**9.24**
1328	66	42	16¾	**9.62**
1329	54	48	15¼	**9.62**
1330	60	48	16¼	**9.90**
1331	66	48	17¼	**10.28**
1332	72	48	18¼	**10.67**
1333	60	54	16¾	**10.67**
1334	66	54	17¾	**11.00**
1335	72	54	18¾	**11.38**
1336	66	60	18¼	**11.71**
1337	72	60	19¼	**12.10**
1338	78	60	20¼	**12.48**
1339	72	66	19¾	**12.81**
1340	78	66	20¾	**13.14**
1341	84	66	21¾	**13.47**
1342	78	72	22¾	**13.86**
1343	84	72	23¼	**14.24**
1344	90	72	24¼	**14.57**
1345	84	78	23¾	**14.96**
1346	90	78	24¾	**15.29**
1347	96	78	25¾	**15.67**

1½-Inch Inside Diameter

No.	Length Point Inches	Nom. Lgth. Jacket Inches	Approx. Weight Pounds	Each
1350	24	18	8½	**$5.55**
1351	30	24	10¼	**6.82**
1352	36	30	12	**8.08**
1353	42	36	13¾	**9.40**
1354	48	42	15½	**10.67**
1355	54	48	17¼	**11.99**
1356	60	54	19	**13.25**
1357	66	60	20¾	**14.52**
1358	72	66	22½	**15.78**

2-Inch Inside Diameter

No.	Length Point Inches	Nom. Lgth. Jacket Inches	Approx. Weight Pounds	Each
1360	24	18	11	**$7.81**
1361	30	24	13½	**9.40**
1362	36	30	16	**10.94**
1363	42	36	18½	**12.54**
1364	48	42	20¾	**14.08**
1365	54	48	23¼	**15.67**
1366	60	54	25¾	**17.16**
1367	66	60	28	**18.75**
1368	72	66	30½	**20.35**
1369	78	72	33	**21.89**
1370	84	78	35¼	**23.48**
1371	90	84	37¾	**25.02**
1372	96	90	40¼	**26.62**

Clayton Mark Peerless Drive Well Points

Seamless Brass Tube Strainer Jacket

V-slots, in inch-thousandths openings, equivalent of gauze mesh, are inside cut to exact widths and lengths and accurately spaced. They will not clog with sand or clay and continuously filter maximum water volume. Point and body are forged in one solid piece for hard driving. Furnished with No. 9 Special Water Well Coupling to take drive pipe. Galvanized inside and outside after punching full length of the point.

1-Inch Inside Diameter

No.	Each	Nom. Lgth. Jacket In.	Approx. Wt. Lb.
1201	**$3.68**	18	4½
1202	**4.56**	24	5½
1203	**5.39**	30	6½
1204	**6.21**	36	7½
1205	**7.09**	42	8¾
1206	**7.92**	48	9¾
1207	**8.80**	54	10¾
1208	**9.62**	60	11¾
1209	**10.45**	66	12¾

1¼-Inch Inside Diameter

No.	Each	Nom. Lgth. Jacket In.	Approx. Wt. Lb.
1210	**$3.57**	14	6½
1211	**4.23**	18	7¾
1212	**5.33**	24	9¼
1213	**6.43**	30	10¾
1214	**7.48**	36	12¼
1215	**8.52**	42	13¾
1216	**9.62**	48	15¼
1217	**10.72**	54	16¾
1218	**11.82**	60	18¼
1219	**12.81**	66	19¾
1220	**13.91**	72	21¼
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1½-Inch Inside Diameter

No.	Each	Nom. Lgth. Jacket In.	Approx. Wt. Lb.
1221	**$5.55**	18	8¼
1222	**6.82**	24	10
1223	**8.03**	30	11¾
1224	**9.40**	36	13½
1225	**10.67**	42	15¼
1226	**11.93**	48	17
1227	**13.20**	54	18¾
1228	**14.46**	60	20½
1229	**15.73**	66	22¼

2-Inch Inside Diameter

No.	Each	Nom. Lgth. Jacket In.	Approx. Wt. Lb.
1230	**$7.81**	18	11½
1231	**9.40**	24	14
1232	**10.94**	30	16½
1233	**12.54**	36	19
1234	**14.08**	42	21¼
1235	**15.67**	48	23¾
1236	**17.16**	54	26¼
1237	**18.75**	60	28½
1238	**20.35**	66	31
1239	**21.83**	72	33½
1240	**23.43**	78	35¾
1241	**24.91**	84	38¼
1242	**26.51**	90	40¾

No. 405 Clayton Mark Irrigation Strainers

For High Pressure and Heavy Suction

Made of steel pipe, perforated and galvanized after punching, then covered with specially woven heavy bronze wire cloth, about 1/16 inch thick with slotted openings in sizes 4 inches and larger (rectangular in sizes 3½ inches and smaller).

Sizes up to 3½ inches have 3 inches of blank pipe at each end; larger sizes have 6 inches.

Single lengths up to 20 feet can be furnished.

Drive or flush plug will be swaged in one end and securely riveted to pipe at same price.

Order by stating pipe size, length, and number of woven wire mesh.

			Mesh of Woven Wire Cloth				
I.D. In.	O.D. In.	Approx. Wt., Lb. per Lineal Foot	60 Per Lineal Foot	80 Per Lineal Foot	90 Per Lineal Foot	100 Per Lineal Foot	Add for Wire Netting Under Jacket per Lin. Foot
1¼	1.785	2¼	**$1.80**	**$2.30**	**$2.90**	**$3.65**	**$.30**
1½	2.025	2¾	**2.20**	**2.75**	**3.50**	**4.25**	**.35**
2	2.495	3¾	**3.05**	**3.65**	**4.35**	**5.45**	**.50**
2½	2.995	5¼	**4.85**	**6.60**	**7.85**	**9.10**	**.65**
3	3.625	7½	**6.65**	**8.45**	**9.70**	**10.90**	**.75**
3½	4.125	9	**7.60**	**9.70**	**10.90**	**12.70**	**1.00**
4	4.625	10½	*	*	*	*	*
4½	5.125	12	*	*	*	*	*
5	5.685	14	*	*	*	*	*
6	6.745	19	*	*	*	*	*
8	8.745	24	*	*	*	*	*
10	10.875	31	*	*	*	*	*
12	12.875	44	*	*	*	*	*

*Price on application.

Clayton Mark Washer Well Points

One-Piece Forged Steel—Galvanized

Forged one-piece body galvanized by hot-dipped process. Holes in tube sections are bored and countersunk. Brass wire cloth is inserted in each hole and securely held in place by peined-in brass washer.

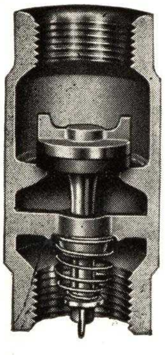
Order by number, stating mesh of gauze.

No.	40, 50 & 60 Gauze Each	20, 30 & 70 Gauze Each	80 Gauze Each	90 Gauze Each	100 Gauze Each	I.D. In.	Length Point In.	No. of Holes	Approx. Weight Pounds
300	**$2.09**	**$2.53**	**$2.97**	**$3.52**	**$4.45**	1¼	20	50	4¾
301	**2.53**	**3.02**	**3.74**	**4.29**	**5.50**	1¼	24	60	6
302	**3.19**	**3.79**	**4.51**	**5.28**	**6.93**	1¼	30	80	7¼
303	**3.90**	**4.56**	**5.28**	**6.27**	**8.36**	1¼	36	100	8½
304	**4.62**	**5.33**	**6.05**	**7.26**	**9.79**	1¼	42	120	9¾
305	**5.28**	**6.10**	**6.82**	**8.25**	**11.22**	1¼	48	140	11
320	**4.29**	**5.17**	**5.88**	**7.04**	**8.47**	1½	24	80	6½
321	**5.39**	**6.27**	**7.20**	**8.63**	**10.67**	1½	30	110	7¾
322	**6.49**	**7.59**	**8.52**	**10.28**	**12.76**	1½	36	130	9
323	**7.59**	**8.80**	**9.84**	**11.93**	**14.90**	1½	42	150	10¼
323½	**8.69**	**10.01**	**11.16**	**13.58**	**16.99**	1½	48	170	11½
324	**8.08**	**9.18**	**10.12**	**11.88**	**14.35**	2	30	140	11¼
325	**9.46**	**10.67**	**11.71**	**13.86**	**17.05**	2	36	170	13
326	**10.78**	**12.10**	**13.36**	**15.84**	**19.80**	2	42	200	14¾
327	**12.10**	**13.53**	**15.01**	**17.87**	**22.49**	2	48	230	16½
328	**13.53**	**15.01**	**16.66**	**19.85**	**25.24**	2	54	260	18
329	**14.90**	**16.44**	**18.26**	**21.83**	**27.94**	2	60	290	19
330	**16.22**	**17.93**	**19.91**	**23.81**	**30.69**	2	66	320	20¾
331	**17.54**	**19.36**	**21.56**	**25.85**	**33.38**	2	72	350	22½
332	**16.22**	**18.48**	**20.68**	**23.43**	**27.00**	2½	36	225	19
333	**20.73**	**23.81**	**27.00**	**30.69**	**36.02**	2½	48	325	23¾
334	**25.30**	**29.26**	**33.27**	**37.95**	**44.99**	2½	60	425	28½
335	**29.81**	**34.70**	**39.60**	**45.21**	**54.01**	2½	72	525	33¼
335½	**34.37**	**40.15**	**45.87**	**52.47**	**63.03**	2½	84	625	38
337	**38.94**	**45.59**	**52.14**	**59.73**	**72.05**	2½	96	725	42¾
338	**21.56**	**24.80**	**27.88**	**30.63**	**36.90**	3	36	250	26¼
339	**27.00**	**31.07**	**35.09**	**38.72**	**46.80**	3	60	470	38¼
342	**32.45**	**36.19**	**42.29**	**46.80**	**56.76**	3	72	580	44¼
346	**37.89**	**43.67**	**49.50**	**54.94**	**66.66**	3	72	580	44¼
348	**43.34**	**49.99**	**56.70**	**63.03**	**76.61**	3	84	690	50¼
350	**48.78**	**56.26**	**63.91**	**71.17**	**86.51**	3	96	800	56¼
370	**43.25**	**46.82**	**50.40**	**54.03**	**63.04**	4	48	440	51
374	**56.74**	**62.55**	**68.43**	**75.62**	**90.02**	4	72	660	70
378	**70.24**	**78.28**	**86.46**	**97.22**	**117.00**	4	96	1020	89
382	**83.73**	**94.01**	**104.48**	**118.82**	**143.99**	4	120	1380	108

No. 5300 Clayton Mark All-Brass Spring Check Valves

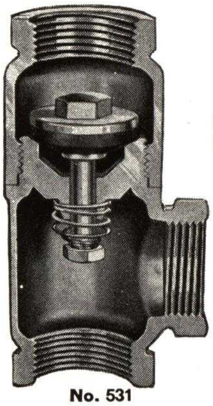
Poppets are brass with Perma-Kleen poppet facing. Poppet springs are monel metal.

Order by number, stating pipe size.



Pipe Size Inches	Each	Enters Pipe Inches	Weight Pounds Each
⅜	**$1.59**	1¼	½
½	**1.92**	1¼	¾
¾	**2.31**	2	1
1	**3.02**	2	1¼
1¼	**3.85**	2½	2
1½	**5.77**	3	2¾
2	**8.36**	3½	4
2½	**14.19**	4½	5¾
3	**18.59**	6	10½
4	**44.38**	8	30
6	**88.77**	12 O.D.	110
8	**231.00**	14¾ O.D.	175

Clayton Mark Spring Poppet Check Valves



No. 531

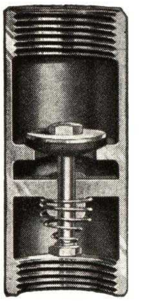
All Brass

Has side outlet below the valve for fresh water line between pump and faucet. Furnished with a bleeder hole.

Size Pipe Inches	No. 531 Each	No. 531 Weight Pounds
⅜	**$2.53**	½
½	**2.53**	¾
¾	**3.08**	1⅛
1	**3.63**	1¾
1¼	**5.17**	2½
1½	**7.26**	3½
2	**10.23**	4¾

No. 532 Clayton Mark Check Valves

All Brass



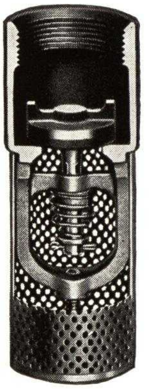
Designed to work efficiently in any service. May be placed vertically or horizontally.

Body and valve parts are brass; outside wall is straight; smooth and polished; both ends tapped pipe size; poppet has red rubber facing and monel metal spring.

Packed 1 in a carton.

Size Pipe	inches	**¾**	**1**
No. **532**	each	**$1.76**	**2.31**
Length	inches	3¼	3½
Enters Pipe Size	inches	1¼	1½
Weight	pounds	½	¾

No. 5340 Clayton Mark Peerless All-Brass Spring Foot Valves



One-piece body. Poppet is brass with Perma-Kleen facing and monel metal spring.

Bottom plate is brass and is connected to valve body with brass screw.

Strainer part is perforated sheet.

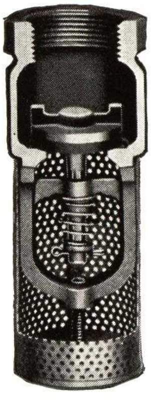
Unless otherwise ordered, strainer with No. 6 perforation will be furnished.

Packed 1 in a carton.

Size Pipe Inches	Each	Length Inches	Enters Pipe Size Inches	Weight Pounds Each
½	**$1.32**	4	1¼	½
¾	**1.54**	4	1¼	¾
1	**1.98**	4½	1½	1
1¼	**2.64**	5	2	1¾
1½	**4.73**	7	2½	2¼
2	**7.15**	8	3	3½

No. 5330 Clayton Mark Spring Foot Valves

All Brass—With Strainer



Silent, positive, spring controlled check valve. Poppet is brass with monel metal spring and composition facing.

Strainer part is perforated sheet brass; No. 2 perforation regularly furnished.

Size Pipe In.	Each	Enters Pipe Inches	Length Overall Inches	Weight Pounds
¾	**$2.42**	2	5	1
1	**2.53**	2½	5¾	2
1¼	**3.30**	2½	6⅜	2½
1½	**5.50**	3	7⅞	4¼
2	**8.25**	4	9⅜	7
2½	**18.59**	5	10¼	14
3	**26.01**	6	11⅝	20

No. E8690 McDonald Swing Check Valves

McDONALD
DUBUQUE

Has horizontal, brass trimmed iron body, black or galvanized, with renewable rubber disc.

Hinge pin, valve seat and flapper valve are of brass. The flapper valve is provided with renewable rubber disc, which can be replaced without disturbing the pipe line. Top cap is brass, so it can readily be removed, when necessary.

When so specified, these valves will be furnished with a ¼-inch pipe tapping on top of discharge side of valve for connection to air compressor of pump or pressure switch.

Size Pipe............inches	¾	1	1¼	1½	2
No. E8690, Black......each	$1.65	$1.65	$1.95	$2.55	$3.60
No. E8690, Galvanized.each	2.00	2.00	2.40	3.15	4.25

McDonald Suction Pipe Strainers

For Open Wells and Cisterns

No. E8681
Set-Screw Type

Made with sufficient space in the openings to provide an ample supply of water.

The 1¼-inch size is made of malleable iron, while the other sizes are made of cast iron.

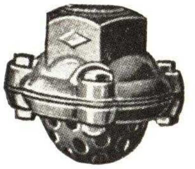
Can be furnished plain, galvanized plain, and galvanized, covered with brass wire cloth, in both set-screw and threaded types.

No. E8682
Threaded Type

Available for pipe sizes: ¾, 1, 1¼, 1½, 2, 2½, and 3 inches.

No. E8685 McDonald Combination Foot Valves and Strainers

Black or Galvanized Cast Iron



Made in two halves, with leather valve and valve seat bolted between. Lower half is perforated to act as a strainer.

Available in ¾, 1, 1¼, 1½, and 2-inch sizes.

Walworth Cast Iron Screwed Strainers

For male thread strainer, screw in a close nipple.

Size Inches	No. 2270 Female Thread Black Each	No. 2271 Female Thread Galv. Each	Length Inches	Largest Diam. Inches
¾	$.60	$.90	3 7/16	2 1/16
1	.80	1.20	4⅛	2 7/16
1¼	1.00	1.50	4⅜	2¾
1½	1.50	2.00	4⅞	3 3/16
2	2.00	3.00	5½	3⅞
2½	3.00	4.00	6⅜	4⅝
3	4.00	6.00	7	5⅜
4	7.50	12.00	7⅞	6 15/16
5	9.50	14.00	8⅞	8⅜
6	13.00	20.00	9⅜	9½
8	30.00	40.00	11⅝	12¼

Clayton Mark Peerless Suction Pipe Strainers

For Open Wells and Cisterns

CLAYTON MARK

Set-Screw

Male Thread

Body is seamless brass tube with vertical grooves and inside cut V-slots Nos. 10, 18 or 35 equivalent respectively to gauze meshes 60, 40 or 20. Unless otherwise ordered, No. 10 slot will be furnished.

Brass bottom plate; brass screw connecting rod.

Inside cut V-slots will not choke.

Packed 1 in carton.

CLAYTON MARK

Female Thread

With Set-Screw No.	With Male Thread No.	With Female Thread No.	Galvanized Top Conn. Any Slot Each	Brass Top Conn. Any Slot Each	Standard Pipe Size Thread Inches
1000	1010	1020	$.88	$.99	¾
1001	1011	1021	.88	.99	1
1002	1012	1022	.99	1.10	1¼
1003	1013	1023	1.15	1.26	1½
1004	1014	1024	1.54	1.76	2
1005	1015	1025	2.20	2.42	2½
1006	1016	1026	3.13	3.46	3

Galvanized Steel Pump Rods

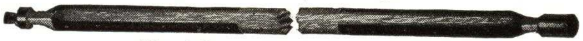
Plain Ends

Furnished in standard length, 20 feet.

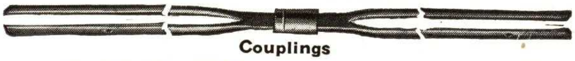
Put up in bundles of approximately 100 pounds.

Size..................inches	⅜	7/16	½	⅝	¾
Per Foot..................	$.05¼	.06¼	.08½	.14	.22½
Wt. per Lgth. of 20 Ft....lb.	9.5	10.2	13.32	20.8	30.

Octagon Wood Pump Rods



Wood Pump Rod with Couplings



Couplings

No.	Wood Rod Per 100 Feet: Galv. Couplings and Copper Rivets	Wood Rod Per 100 Feet: With Black Couplings	Wood Rod Per 100 Feet: Blank Rod	Couplings Per Set: Galv.	Couplings Per Set: Black	Approx. Wt., Lb.: Couplings per Set	Approx. Wt., Lb.: Rods with Couplings per 100 Ft.
1	$18.10	$16.35	$9.25	$1.90	$1.50	2¼	45
2	26.00	23.35	13.30	2.65	2.15	6½	75
3	30.20	27.25	16.40	2.65	2.15	6½	100
4	41.10	36.95	21.45	4.15	3.20	8½	150
10	84.55	76.00	48.05	6.60	5.20	14¾	200
12	96.55	86.65	57.25	6.60	5.20	14¾	240
12B	108.60	97.65	57.25	9.80	7.80	23¼	260
13	150.80	135.75	73.50	16.40	13.05	25	350
14	181.00	162.90	96.95	16.40	13.05	25	450

No.	For Pipe Size, In.	Size, Rod In.	Size Box & Pin, In.	No. Threads	No. Rivet Holes	Rivet, In.: Diam.	Rivet, In.: Length
1	2	1⅛	⅝	12	4	3/16	1½
2	2½	1⅜	⅞	10	6	9/32	1¾
3	3	1⅝	⅞	10	6	9/32	1⅞
4	3½	1⅞	1	10	6	5/16	2¼
10	4 to 5	2¼	1⅛	8	6	5/16	2¾
12	6	2½	1⅛	8	6	5/16	3
12B	6	2½	1¼	8	9	⅜	3
13	7 to 8	3	1½	8	7	7/16	3½
14	8 to 10	3½	1½	8	7	7/16	4

Demon Grip Wood Rod Couplings

Made of cold rolled steel. Two rivet holes in long strap, one in short strap. In sizes: ⅞ x 1⅛ inch, 1 x 1 inch, 1 x 1⅛ inch and 1⅛x1⅛ inch. Galvanized finish.

Per Set.. $.52

Clayton Mark Airtite Pump Rods

Galvanized Steel

Suitable for single and double acting cylinder service in any depth wells. Solid steel couplings, with square shoulders, welded to pipe. Box recessed to permit butt joints. Order by number, stating length.

No.	Per 100 Feet 5-Foot Lengths	10-Foot Lengths	15-Foot Lengths	Random 18 to 20 Ft. Lengths	Pipe Size In.	Corres. Wood Rod Sizes, Inches	Box and Pin Size In.	Thrds. per In.	Wt. Lb. per 100 Feet Random Lgths.
1	$33.49	$25.41	$23.10	$20.79	⅜	1⅛	⅝	12	60
2½	49.11	37.56	32.34	30.03	¾	1⅛	⅝	12	122
2	49.11	37.56	32.34	30.03	¾	1⅜ or 1⅝	⅞	10	122
3	70.45	54.28	50.82	46.20	1	1⅞	1	10	180
4	94.71	76.23	71.61	64.68	1¼	2¼	1⅛	8	250
5	158.23	129.36	117.81	103.95	2	3 or 3½	1½	8	420

Demon Grip Steel Pump Rod Couplings

Made of solid hot forged steel and galvanized after the threads are cut. Packed in boxes of 25.

Size.....inches	⅜	7/16	⅜x7/16	½	⅜x½	7/16x½
Per 1000.......	$60.00	60.00	60.00	86.00	86.00	86.00
Thread..inches	14	12	14x12	12	14x12	12x12

No. 720 Clayton Mark Hexagon Steel Pump Rod Couplings

Made from solid bar stock. Cadmium plated; threads and outside surface rustproof. Ends tapered. *Furnished with regular pumpmakers standard thread in ⅜, 7/16 and ½-inch sizes; ⅝-inch size furnished with 11 threads per inch for steel rod unless otherwise ordered.

Packed 25 pieces per box; ⅜, 7/16 and ½-inch sizes.

Rod Size Inches	Per 100 Pieces	Rod Threads per Inch	Wt. Lb. per 100 Pieces	Rod Size Inches	Per 100 Pieces	Rod Threads per In.	Wt. Lb. per 100 Pieces
⅜ x⅜	$8.58	14	11	¾x⅝	$85.25	10x12	31
7/16x7/16	8.58	12	10	⅞x⅞	142.12	10	31
7/16x⅜	8.58	12x14	10	⅞x⅜	142.12	10x14	47
½ x½	8.58	12	10½	⅞x7/16	142.12	10x12	45
½ x⅜	8.58	12x14	12	⅞x½	142.12	10x12	43
½ x7/16	8.58	12	12	⅞x⅝	142.12	10x12	41
⅝ x⅝	18.48	12	15	⅞x¾	142.12	10	39
⅝ x⅜	18.48	12x14	17	1 x1	142.12	10	40
⅝ x7/16	18.48	12x12	16¾	1 x⅜	142.12	10x14	58
⅝ x½	18.48	12x12	15½	1 x7/16	142.12	10x12	55
¾ x¾	85.25	10	29½	1 x½	142.12	10x12	53
¾ x⅜	85.25	10x14	35½	1 x¾	142.12	10	49
¾ x7/16	85.25	10x12	34	1 x⅝	142.12	10x12	44
¾ x½	85.25	10x12	33	......	....	.....	..

*N.C. or U.S.S. threads can be furnished at the same prices on special order. Threads per in.: ⅜-in. size, 16 threads; 7/16-in., 14 threads; ½-in., 13 threads.

No. 430 Clayton Mark Beaded Couplings

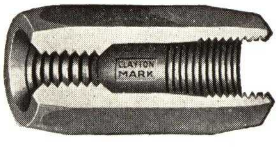
For Iron Rods

Made of malleable iron. Couplings are bored before tapping. Threads are sharp and clean. Couplings are straight.

When ordering, give size, and specify whether black or galvanized couplings are desired.

For Rods Size Inches	Galv. per Lb.	Black per Lb.	Rod Threads per Inch
⅜	$.74	$.63	14, Regular
⅜	.74	.63	16, to Order
⅜x7/16	.74	.63	14x12
7/16	.74	.63	12
½x½	.74	.63	12
⅝x⅝	.74	.63	12
⅝x⅜	.74	.63	12x14

No. 428 Hexagon Steel Reducer Couplings



For connections between pipe and steel pump rod.

Thread Size	Per 100	Thread Size	Per 100
⅜″ Pipe x ⅜″ Pipe	$28.49	½″ Pipe x ½″ Pipe	$42.79
⅜″ Pipe x ⅜″ Rod	28.49	½″ Pipe x ⅜″ Pipe	42.79
⅜″ Pipe x 7/16″ Rod	28.49	½″ Pipe x ⅜″ Rod	42.79
⅜″ Pipe x ½″ Rod	28.49	½″ Pipe x 7/16″ Rod	42.79
⅜″ Pipe x ⅝″ Rod	28.49	½″ Pipe x ½″ Rod	42.79
....	.....	½″ Pipe x ⅝″ Rod	42.79

No. 490 Clayton Mark Steel Hexagon Reducer Couplings

Made of solid bar cold rolled steel accurately tapped, and threaded.

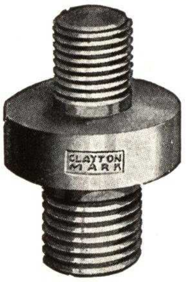
Outside surface galvanized.

Size Threads, Inches Male Pipe	Female Rod	Each	Threads per Inch
⅜	⅜	$.27	18 & 14
½	⅜	.42	14
⅜	7/16	.27	18 & 12
½	7/16	.42	14 & 12
⅜	½	.27	18 & 12
½	½	.42	14 & 12
⅜	⅝	.27	18 & 12
½	⅝	.42	14 & 12

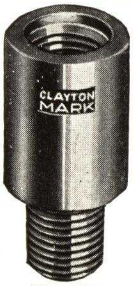
Clayton Mark Steel Substitutes

For connections between wood rod, steel rod or pipe.

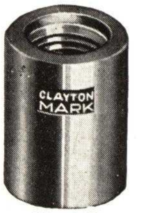
The diameter of the round couplings is the same as diameter on wood sucker rod couplings with corresponding thread connections.



No. 811 Male to Male



No. 812 Male to Female



No. 813 Female to Female

When ordering state type and thread size.

Size	⅜″ Rod Each	7/16″ Rod Each	½″ Rod Each	⅝″-12 Thread Each	¾″-10 Thread Each	⅞″-10 Thread Each
⅜″ Rod	....	....	....	$.69	$1.10	$1.27
7/16″ Rod	....	....	....	.69	1.10	1.27
½″ Rod	....	....	....	.69	1.10	1.27
⅝″-12 Thread	$.69	$.69	$.69	.69	1.10	1.27
¾″-10 Thread	1.10	1.10	1.10	1.10	1.10	1.27
⅞″-10 Thread	1.27	1.27	1.27	1.27	1.27	1.27
1″ -10 Thread	1.56	1.56	1.56	1.56	1.56	1.56
1⅛″- 8 Thread	2.83	2.83	2.83	2.83	2.83	2.83
1½″- 8 Thread	4.29	4.29	4.29	4.29	4.29	4.29

Size	1″-10 Thread Each	1⅛″-8 Thread Each	1½″-8 Thread Each	⅜″ Pipe Each	½″ Pipe Each	¾″ Pipe Each
⅜″ Rod	$1.56	$2.83	$4.29	$.69	$1.27	$1.56
7/16″ Rod	1.56	2.83	4.29	.69	1.27	1.56
½″ Rod	1.56	2.83	4.29	.69	1.27	1.56
⅝″-12 Thread	1.56	2.83	4.29	.69	1.27	1.56
¾″-10 Thread	1.56	2.83	4.29	1.10	1.27	1.56
⅞″-10 Thread	1.56	2.83	4.29	1.27	1.27	1.56
1″ -10 Thread	1.56	2.83	4.29	1.79	1.79	1.79
1⅛″- 8 Thread	2.83	2.83	4.29	2.83	2.83	2.83
1½″- 8 Thread	4.29	4.29	4.29	4.29	4.29	4.29

Clayton Mark Steel Guide Couplings

Wing Type—Galvanized

No. 659

No. 660

Provides maximum water passage and perfect guide for pump rod.

No. 659 with closed tapped sockets which permit airtight joint with air chamber sections when used with standard pipe pump rod.

No. 660 box and pin suitable for use with octagon wood rod or Airtite pump rod.

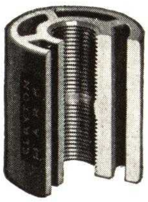
		Threaded				
		No. 659		No. 660		
				Box & Pin		
For Pipe In.	**Steel** Each	Solid Steel Pump Rod, In.	Standard Pipe Pump Rod, In.	Airtite or Wood Rod		Approx. Wt. Lb.
1¼	$.60	⅜, 7/16 or ½	¼	....	....	½
1½	.77	7/16, ½ or ⅝–12	¼, ⅜	....	....	¾
2	.99	7/16, ½ or ⅝–12	¼, ⅜, ½	⅝″–12	....	1
2½	1.26	....	¾	⅝″–12	⅞″–10	1¼
3	1.65	....	¾	⅝″–12	⅞″–10	2
3½	2.36	....	1	⅞″–10	1″–10	3½
4	2.80	....	1, 1¼	1″–10	1⅛″– 8	4¼
4½	3.41	....	1¼	1″–10	1⅛″– 8	4¾
5	3.96	....	1¼, 1½	1⅛″– 8	1½″– 8	6¾
6	5.66	....	1¼, 1½, 2	1⅛″– 8	1½″– 8	10¼

No. 658 Clayton Mark Guide Couplings

Used to prevent swerving of pump rod line on down stroke in heavy duty wells.

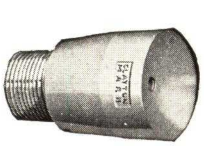
Made of semi-steel casting, black finish.

Tapped with standard size pipe threads.



Pipe Size In.	Each	Tapped Pipe Size In.	O.D. In.	Length Inches	Approx. Weight Pounds
2	$1.54	½	1 13/16	2 1/16	⅞
2½	1.65	¾	2 5/16	2 5/16	1¼
3	1.98	¾	2 11/16	2 7/16	2
3½	2.31	1	3⅜	3	3½
4	2.69	1¼	3⅞	3	4¼
4½	3.46	1¼	4 5/16	3	4¾
5	3.90	1½	4 13/16	3 5/16	6¾
6	5.50	2	5¾	3½	10¼

No. 621 Clayton Mark Pipe Drifts



Used for drifting pipe for tubular wells. Made of solid bar steel. Sharp cutting edge. Standard pipe thread.

Order by number, stating size.

Size.........inches	2	2½	3
No. **621**......each	$9.24	12.98	18.48
Threaded Pipe Size......inches	1	1¼	1½
Approx. Wt....lb.	2¼	4½	7½

No. 623 Clayton Mark Tool Couplings

Used with well tools. Extra long, heavy steel; recessed. Black finish.

CLAYTON MARK

Size In.	Each	O.D. In.	Lgth. In.	Approx. Wt. Lb.
¾	$.83	1 7/16	3	¾
1	.83	1⅝	3½	1
1¼	1.10	2⅛	3¾	1½
1½	1.27	2 5/16	3¾	2
2	1.67	2 15/16	3¾	2¼

No. 559 Clayton Mark Sanitary Well Caps

For 2-Pipe Ejector Pumps

Top members are cast iron on all sizes except 4-inch, which is brass. Bottom members are brass on all sizes. Center members are high grade rubber packer.

Cadmium-plated steel bolts are fitted with cotter pins to prevent detachment of bottom members.

Vent threaded for ½-inch pipe and has steel bushing from bottom members through rubber packer to insure full opening.

Well Size, In.	Drop Pipe Sizes, In.	Centers Inches	Each
3	1 x ¾	1 7/16	$5.20
4	1 x ¾	2	5.20
4	1¼x1	2 1/16	5.20
4¼	1 x ¾	2	5.40
4¼	1¼x1	2 1/16	5.40
4½	1 x ¾	2	5.40
4½	1¼x1	2 1/16	5.40
4½	1½x1¼	2 1/16	5.40
5	1 x ¾	2	5.60
5	1¼x1	2 1/16	5.60
5	1½x1¼	2 11/32	5.60
5⅝	1 x ¾	2	7.50
5⅝	1¼x1	2 1/16	7.50
5⅝	1½x1¼	2 11/32	7.50
5⅝	2 x1½	2 15/16	7.50
6	1 x ¾	2	7.50
6	1¼x1	2 1/16	7.50
6	1½x1¼	2 11/32	7.50
6	2 x1½	2 15/16	7.50
6	2 x1½	2 25/32	7.50
6	2½x2	2⅞	7.50
6¼	1 x ¾	2	7.90
6¼	1¼x1	2 1/16	7.90
6¼	1½x1¼	2 11/32	7.90
6¼	2 x1½	2 15/16	7.90
8	1½x2	2 15/16	14.00
8	2 x2½	3⅞	14.00
8	2½x3	3⅞	14.00
8	1 x ¾	2	15.80
8	1¼x1	2 1/16	15.80
8	1½x1¼	2 11/32	15.80

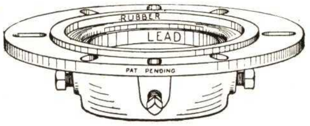
No. 359 Clayton Mark Sanitary Well Caps

Supplementary to No. 459 Caps for larger drop pipes, sizes not available because expansion of rubber cannot be accomplished by No. 459 method.

To install, fasten eye bolt clamp to casing securely, slip rubber packer and casing plate on drop pipe. Crowd rubber packer into casing by pushing down on casing plate. Swing eyebolt up into casing eyebolt slots, screw down eyebolt nuts against washers and casing plate; this will expand rubber packer against casing and drop pipe making tight seal.

Well Size Inches	Drop Pipe Size Inches	Each
2	1 or 1¼	$4.84
2½	1¼ or 1½	4.01
3	1½ or 2	3.63
3½	2 or 2½	4.01
4	2½ or 3	4.51
4½	3	5.44
5	3½	6.87
5⅝	3½ or 4	8.69
6	4½	10.28

No. 1036 Duplex Sanitary Pump Flanges and Well Seals



Meets the requirements of the Wisconsin State Well Drilling Sanitary Code.

For supporting hand and windmill pumps and providing a watertight joint between well casing and pump. No threads required on well casing.

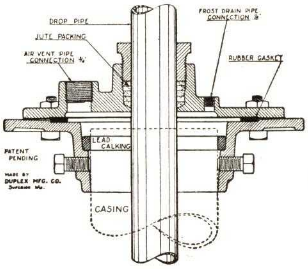
Consists of pump flange, special lead packer (no heat required), soft rubber gasket, six ⅜x1¼-inch machine bolts, caulking tool, and instruction sheet.

Made in pipe sizes 3, 3½, 4, 4½, 5, and 6 inches and S. & S. casing sizes 4, 4¼, 4½, 5, 5⅝, and 6¼ inches. State size when ordering.

Approximate shipping weight, 12 pounds.

No. **1036**......................................each ....

No. 1036-1038 Duplex Combination Sanitary Pump Flange, Well Seal and Adapter


DROP PIPE
JUTE PACKING
AIR VENT PIPE CONNECTION ¾"
FROST DRAIN PIPE CONNECTION ⅛"
RUBBER GASKET
LEAD CALKING
PATENT PENDING
MADE BY DUPLEX MFG. CO. SUPERIOR WIS.
CASING

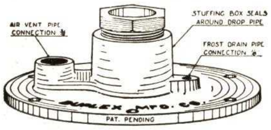
A combination unit made up of No. 1036 flange and well seal and No. 1038 adapter. Adapter is tapped for ¾-inch air vent pipe and ⅛-inch frost drain pipe. Air vent pipe and frost drain pipe are not furnished.

Adapter can be had for ¾, 1, 1¼, 1½, 2, 2½, and 3-inch drop pipe. State size when ordering. Pump flange and well seal in pipe sizes 3, 3½, 4, 4½, 5, and 6 inches; S. & S. casing sizes 4, 4¼, 4½, 5, 5⅝, and 6¼ in. State size when ordering.

Weight, 21 pounds.

No. 1038 Duplex Adapters

For No. 1036 Sanitary Pump Flanges and Well Seals


AIR VENT PIPE CONNECTION ¾"
STUFFING BOX SEALS AROUND DROP PIPE
FROST DRAIN PIPE CONNECTION ⅛"
DUPLEX MFG. CO.
PAT. PENDING

Used to attach to No. 1036 flange and seal to make casing seal and drop pipe seal for underground or pitted pumps.

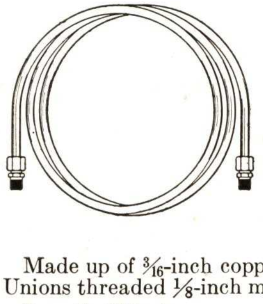
Provided with ¾-inch pipe connection for air vent and ⅛-inch pipe connection for frost drain. Wisconsin code requires air vent sizes to be in proportion to their length; viz., 2-foot length, ⅜-inch; up to 6-foot length, ½-inch; when over 6-foot length, ¾-inch.

Sufficient ¼-inch square braided packing is included with each adapter.

Made for ¾, 1, 1¼, 1½, 2, 2½, and 3-inch drop pipe. State size when ordering.

Approximate shipping weight, 9 pounds.

No. 1039 Duplex Frost Drain Pipe Assemblies



Makes a handy and easily installed accessory for conducting drainage of water from vent hole in pumps into well, in connection with underground or pitted pump installations. By the use of this drain pipe, water drainage is conducted back into the well through the well seal instead of into the well pit. This is desirable from a sanitary standpoint.

Made up of 3/16-inch copper tubing with two brass unions. Unions threaded ⅛-inch male pipe size.

Length, 30 inches.

Approximate weight, 1¼ pounds.

No. **1039**......................................each ....

No. 433 Clayton Mark Malleable Iron Drive Shoes

CLAYTON MARK

Sizes up to 4 inches inclusive can be furnished with or without shoulder. Open type only.

Shoes without shoulder and threaded to A.I.S.I. Standard Gage will be furnished unless otherwise specified.

Size Pipe . inches	2	2½	3	3½	4	4½	5	6
No. **433**....each	**$1.70**	**2.31**	**3.02**	**3.96**	**4.95**	**7.53**	**8.74**	**10.01**
Approx. Wt. . lb.	2	2½	3½	5	7	8	10	15

No. 421 Clayton Mark Drive Shoes

CLAYTON MARK
Seamless Forged Steel

Pipe,In.	Each	Wt. Lb.	Pipe., In.	Each	Wt.Lb.
2	**$3.24**	2	**5⅝**	**$12.54**	12
2½	**4.40**	2½	**6**	**14.30**	19
3	**6.16**	3½	**6¼**	**14.30**	19
3½	**7.26**	5	**6⅝**	**18.75**	21
4	**9.24**	7	**8**	**26.79**	40
4¼	**9.24**	7	**10**	**48.95**	75
4½	**10.56**	8	**12**	**65.55**	110
5	**11.99**	11	....	.....	...

No. 431 Artesian Couplings

CLAYTON MARK

May be used on tubular cylinder for shoulder at intermediate point.

Made of malleable iron, galvanized.

Size.......in.	2	2½	3	3½	4
No. **431**...ea.	**$1.43**	**2.42**	**2.80**	**4.29**	**4.62**
Lgth......in.	3 5/16	4¼	3⅝	3¾	3¾
Wt.......lb.	2	4¼	4¾	5	6¼

No. 618 Clayton Mark Malleable Iron Drive Caps

CLAYTON MARK

For driving pipe and well joints. Threads are standard. State size.

Pipe Size In.	Each	Wt. Lb.	Pipe Size In.	Each	Wt. Lb.
1¼	**$.60**	1½	**2½**	**$2.80**	5¼
1½	**.71**	2	**3**	**3.57**	6¼
2	**1.26**	3¼	**4**	**4.29**	9½

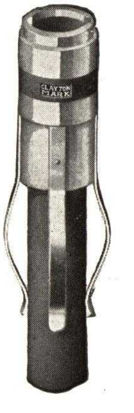
No. 619 Clayton Mark Steel Drive Heads

CLAYTON MARK

Made from solid bar steel, heat treated; hole drilled and threads cut sharp.

Size Pipe In.	Each	Approx. Wt. Lb.	Size Pipe In.	Each	Approx. Wt. Lb.
1¼	**$4.62**	2¾	**3**	**$27.17**	16¾
1½	**6.05**	3½	**4**	**47.96**	28½
2	**7.64**	7½	**5**	**72.76**	45¼
2½	**18.26**	12¼	**6**	**91.46**	64

No. 495 Clayton Mark Well Packers



Used for making tight joints between strainer and well casing. Also used as a support for cylinders.

Easily located and removed while in use.

Diameter Well Inches	Each	Bottom of Packer Threaded for Pipe Inches
2	**$ 3.19**	1¼
2½	**4.29**	1½
3	**5.66**	2
3½	**9.24**	2
4	**12.70**	2½
4½	**15.62**	3
5	**21.23**	3½
6	**29.81**	4
8	**63.91**	6

No. 496 Clayton Mark Gum Packers

With Brass Attached

For seating working barrels.

Diam. Well Casing In.	Each	Diam. Well Casing In.	Each	Diam. Well Casing In.	Each
2	$4.18	3½	$9.68	5	$17.43
2½	6.10	4	12.10	6	25.57
3	7.86	4½	14.52	8	39.05

No. 498 Clayton Mark Well Seals

Diameter Well Pipe Inches	Each	Tapped for Pipe Inches	Diameter Well Pipe Inches	Each	Tapped for Pipe Inches
2	$2.53	¾	4½	$15.34	3
2½	3.79	1	5	20.51	3½
3	5.11	1¼	6	25.63	4
3½	7.70	2	8	51.26	6
4	10.23	2½	...	.....	...

Check Packers For Tubular Well Valves

Size Valve .....inches	2	2½	3	4
Each........	$.27	.51	.70	3.48

No. 624 Clayton Mark Pipe Pullers

Body is made of malleable iron. Serrated dies will hold pipe without crushing it; pipe coupling will pass through puller.

One set of any size dies specified, furnished without extra charge. Order by number, stating size of dies.

No.	Each	Size of Dies, In
2	$7.81	1,1¼,1½,2
3	14.19	2,2½,3
4	24.14	3,3½,4
6	34.10	4,4½,5,6
*8	42.62	6,8
*10	71.06	8,10

*Has 4 segments.

Extra Dies

Size I.P. In.	Each For Size No. 2	3	4	Size I.P. In.	Each For Size No. 4	6	8	10
1	$2.31	....	....	4	$4.95	$8.52	.....	.....
1¼	2.14	....	....	4½	....	7.81	.....	.....
1½	1.43	....	....	5	....	7.09	.....	.....
2	1.43	$2.31	....	6	....	6.38	$11.38	.....
2½	....	2.14	....	8	....	....	8.47	$19.85
3	....	2.14	$6.38	10	....	....	.....	14.19
3½	....	....	5.66	....	....	....	.....	.....

Diamond Pipe Holders

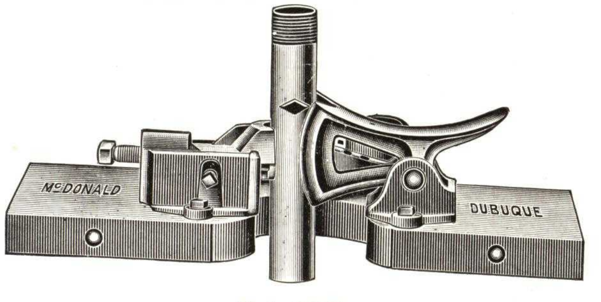
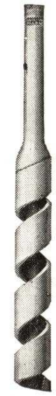


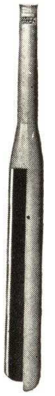
Plate E8871

A strong and simple pipe holder to be used when taking out or putting in pumps. Adjustable for 1, 1¼, 1½ or 2-inch pipe, the set screw being screwed in or out to fit required size. Price..each **$4.00**

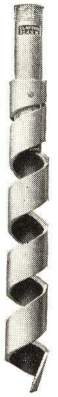
Clayton Mark Earth Augers



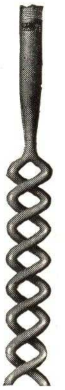
No. 600 Chisel Bit



No. 601 Pod



No. 603 Twist



No. 604 Spiral

Used for boring through inside of pipe. Made of high carbon steel, heat treated. Threads are sharp; standard pipe size.

For Use P. S..in.	2	2½	3	3½	4	4½	5	6
Each......	$11.88	12.76	13.91	17.05	19.85	29.81	39.76	49.77
Threaded P. S..in.	1	1¼	1¼	1½	2	2	2	2

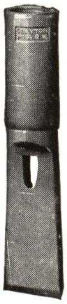
No. 626 Clayton Mark Taper Taps

CLAYTON-MARK

For pulling pipe or valves which have been disconnected. Forged from high carbon steel and heat treated. Furnished with right-hand threads unless otherwise ordered.

For Pipe..................inches	1	1¼	1½
No. 626.....................each	$12.48	17.27	41.58
To Pull Pipe..............inches	⅜ to 1¼	¾ to 2	2 to 3

Clayton Mark Sand Pumps and Drills



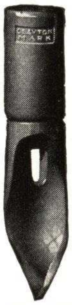
No. 615

Drilling member is forged from steel and properly tempered.

Tapped for standard pipe size thread.

Ball poppet is furnished with either type.

Well Size Inches	Each	Tapped for Pipe Inches
1¼	$5.11	½
1½	5.11	¾
2	5.11	1
2½	7.70	1
3	10.23	1¼
4	12.70	2



No. 616

No. 629 Clayton Mark Sand Buckets

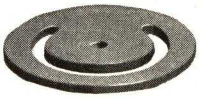
Sizes 2 to 5 inches made of seamless steel tube, larger sizes made of galvanized sheet steel.

Standard length of body, 4 feet; longer lengths at extra cost.

Well Size.in.	2	2½	3	4	5	6	8
No. 629...ea.	$6.43	$7.04	$7.70	$10.23	$12.81	$15.34	$20.51
Bottom Only...ea.	3.24	3.85	4.45	5.77	7.04	8.30	9.57
Extra lgth., Add per ft.	.93	.93	1.15	1.65	2.31	2.97	5.00
Approx. Wt.....lb.	9¼	13	17	29½	35¼	55	109½

McDonald Diamond Brand Cylinder Leathers

Cupped Plunger Leather


Valve Leather

Cylinder Cap Washer

Made from carefully selected and graded cow hides. The tanning process leaves leather both durable and pliable, not rock-hard or brittle.

Diamond Cupped Plunger Leathers

Furnished in three grades—Ajax, Excello, and Supreme. Finished in a new velvet finish which gives a fine appearance.

Ajax. Outstanding for general pump work. Made from selected pieces of sides and backs. Tanned by a process leaving leather live and pliable.

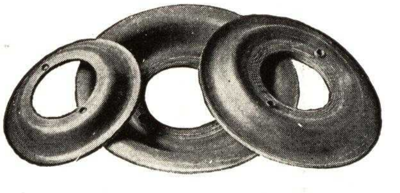
Excello. A high quality leather for force pump and deep well work. Made from selected upper side and back leather only. Tanned by a process which leaves leather live and pliable, and processed to resist the actions of various well waters.

Supreme. Made for and used in the deepest wells and the most severe service. Cut from only the narrow back strip from carefully selected hides of healthy cows. Leather used must pass many tests and careful inspections. The process of tanning leaves this leather comparatively pliable, and no amount of age can make it rock-hard or brittle. Its double process makes it particularly impervious to the actions of all kinds of water.

Leathers are packed 12 in a labeled carton.

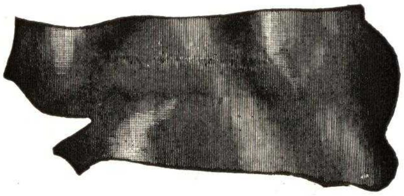
No. 2810 Lucky Strike Trench Pump Rubber Diaphragms

For Edson Pumps



Size No.	2	3	4
No. **2810**......each	....	....	....
Inside Diameter......inches	3⅞	4⅞	5½
Outside Diameter......inches	11⅛	13	14¾

Pump Leather in Sides



Oak tanned only.

Per Pound........................**$1.50**

No. 706 Clayton Mark Black Perfection Cup Leathers

CLAYTON MARK

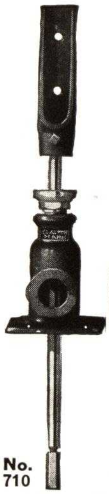
For deep wells. Made from center of hides, specially selected and treated. Highly polished black finish.

Sizes up to and including 3½ inch packed 12 in carton; larger sizes, 6.

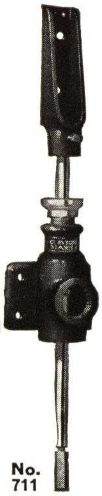
Size In.	Per Dozen	Std. Hole Size In.	Nom. Wt. Lb. 100 Pieces	Size In.	Per Dozen	Std. Hole Size In.	Nom. Wt. Lb. 100 Pieces	*Size In.	Per Dozen
⅞	**$1.48**	⅜	½	**4**	**$10.10**	3	11	**8¼**	**$42.42**
1	**1.48**	⅜	¾	**4¼**	**11.12**	3⅛	12¼	**8½**	**44.91**
1⅛	**1.66**	⅜	1	**4½**	**12.22**	3⅛	13½	**8¾**	**47.39**
1¼	**1.84**	⅜	1¼	**4¾**	**13.78**	3½	15	**9**	**49.96**
1⅜	**2.02**	⅜	1½	**5**	**15.80**	3¾	21	**9¼**	**52.53**
1½	**2.20**	⅜	1¾	**5¼**	**17.55**	3¾	15	**9½**	**55.28**
1⅝	**2.35**	⅜	2	**5½**	**19.10**	4	16½	**9¾**	**57.76**
1¾	**2.48**	1⅛	2¼	**5¾**	**20.76**	4⅜	19¾	**10**	**60.81**
1¹³⁄₁₆	**2.62**	1³⁄₁₆	2½	**6**	**22.97**	4½	18¾	**10¼**	**63.46**
1⅞	**2.62**	1³⁄₁₆	2½	**6¼**	**24.90**	4¾	20	**10½**	**66.49**
2	**3.31**	1⁵⁄₁₆	3	**6½**	**26.99**	5¼	21	**10¾**	**69.33**
2¼	**3.65**	1⅜	3½	**6¾**	**28.93**	5¼	23½	**11**	**72.46**
2½	**3.94**	1⅝	4	**7**	**31.03**	5½	24½	**11¼**	**75.41**
2¾	**4.69**	1⅞	4¾	**7¼**	**33.34**	5½	24¾	**11½**	**78.63**
3	**5.29**	2	6	**7½**	**35.72**	5¾	25½	**11¾**	**81.82**
3¼	**6.07**	2⅛	7	**7¾**	**37.46**	6¼	25¾	**12**	**85.41**
3½	**6.90**	2½	7¼	**8**	**40.05**	6¼	26¾	....	.....
3¾	**8.63**	2⅝	9½	...	.....	...	....	....	.....

*Standard hole size for these sizes as specified, weights accordingly.

Clayton Mark Windmill Stuffing Box Heads



No. 710

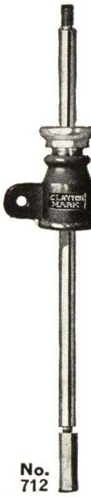


No. 711

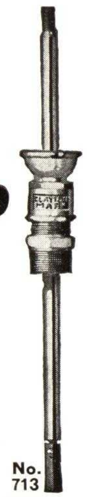
Nos. 710, 711 and 712 are made of iron, except packing nuts which are brass. No. 713 is all brass except the rod.

The discharge for Nos. 712 and 713 is made by a tee attached to suction pipe below head.

All rods are threaded ⁷⁄₁₆-inch. Rods are all ⅝x18 in. except on the No. 713, 2-in. size which is fitted with ¾x 24-in. rod.



No. 712



No. 713

For Pipe Inches	No. 710 Each	No. 710 Wt. Lb.	No. 711 Each	No. 711 Wt. Lb.	No. 712 Each	No. 712 Wt. Lb.	No. 713 Each	No. 713 Wt. Lb.
1	**$8.47**	12½	**$8.47**	12¾	**$5.22**	8	....	...
1¼	**8.47**	11¾	**8.47**	12	**5.22**	7½	**$6.05**	3¾
1½	**9.95**	17¾	**9.95**	19¼	**5.22**	10	**6.05**	4
2	**9.95**	16¾	**9.95**	18	**5.22**	8¾	**6.05**	4¼

When Ordering

please refer to the sizes and numbers shown in this book. It will help us in filling your order accurately.

No. E8715 McDonald Floats

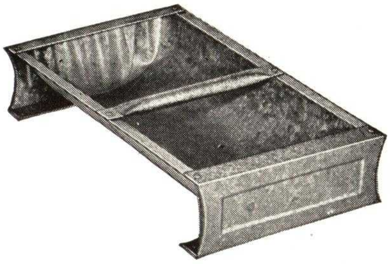
For Float Valves

Made either of copper or galvanized steel.

The copper float is 2¾x9½ inches, while the galvanized is 3x12 inches.

Butler Troughs and Pans

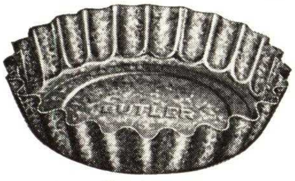
Galvanized to Last Hog Troughs



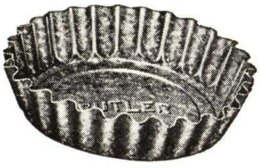
For the farrowing pen, feeding platform or feed lot. The body is stamped from one piece of galvanized steel, reinforced by heavy galvanized legs securely fastened to each end by tubular cross braces on top. Width, 10½ inches; depth, 4½ inches. 1½ times first class freight rate applies.

Length.........feet	2	3	4	6	8	10
Each...............	....	....	....	....	....	....
Weight........pounds	5	8	10	15	25	30

Hog Feeding Pans



No. BP-16



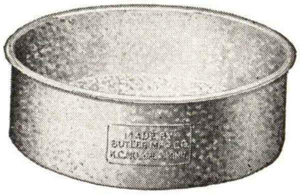
No. BP-15

Stamped in one piece of galvanized steel. Corrugated sides. Wire bundled one dozen to nest.

No. BP-16 Pan is 24 gage, 16 inches in diameter, 3⅝ inches deep. No. BP-15 Pan is 26 gage, 15 inches in diameter, 3½ inches deep.

No.	BP-16	BP-15
Per Dozen..........................	....	....
Weight per Dozen.................pounds	35	25

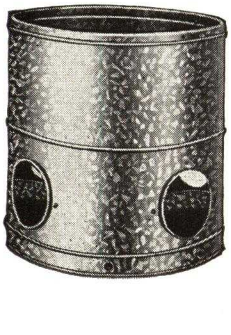
Utility Feed Pans



For cooking feeds, sterilizing or watering pan for chickens and small animals, for nests, mixing pan or takes the place of baskets and boxes. Made of 24 gage galvanized steel with rolled top. 14½ inches in diameter, 5 inches deep, capacity, 13 quarts. Weight per dozen, 45 pounds. Takes third class freight.

Per Dozen........ ....

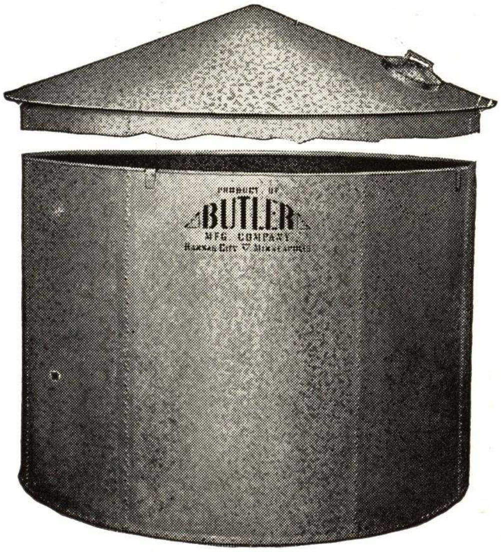
Automatic Watering Fountains



For use where an individual water supply is needed for the segregated breeding and feeding pens or pastures or for general watering purposes on farms handling a large number of small animals or poultry and only a few horses, cows, etc. Automatic fountain serves four drinking openings.

No.	Each	Diam. Ft.	Height Ft.	Cap. Gals.	Ship. Wt. Lbs.
A22	.....	2	2	31	33
A2525	.....	2½	2½	65	47
A33	.....	3	3	119	64

Butler Galvanized Water Storage Tanks



Made from 20-gage galvanized zincgrip steel. By using coil steel the tank is built with only one vertical seam in each tier of sheets. Heavily tinned rivets are used in joining all side wall seams. Regularly furnished without cover, but may be ordered with tight, galvanized cone cover attached at factory or detached to be riveted to tank at destination.

Regularly fitted with 1-inch flange in side near bottom.

Tanks larger than 8x8 feet should be made of 18-gage or heavier. For each even gage heavier than 20, add 30 per cent to weight. Tanks of 12-gage and heavier have electric welded seams.

When k.d. storage tanks are ordered, rivets, solder, and soldering acid are furnished.

No.	Diam. Ft.	Ht. Ft.	Cap. Bbls.	WEIGHT, LB. Tank	WEIGHT, LB. Cover
S34	3	4	5¾	90	20
S35	3	5	7¼	110	20
S36	3	6	8¾	125	20
S354	3½	4	8¼	110	22
S355	3½	5	10¼	125	22
S356	3½	6	12¼	140	22
S44	4	4	10¾	122	23
S45	4	5	13½	144	23
S46	4	6	16¼	165	23
S47	4	7	19	186	23
S475	4	7½	20½	197	23
S48	4	8	21¾	208	23
S410	4	10	27¼	250	23
S454	4½	4	14	141	29
S455	4½	5	17¼	165	29
S456	4½	6	20¾	189	29
S457	4½	7	24½	213	29
S4575	4½	7½	26¼	225	29
S458	4½	8	28	237	29
S4510	4½	10	35	285	29
S54	5	4	17¼	160	35
S55	5	5	21¾	186	35
S56	5	6	26	213	35
S57	5	7	30¼	240	35
S575	5	7½	32½	253	35
S58	5	8	34¾	266	35
S554	5½	4	21	179	42
S555	5½	5	26½	209	42
S556	5½	6	31½	238	42
S557	5½	7	37	267	42
S5575	5½	7½	39¼	282	42
S558	5½	8	42½	297	42
S5510	5½	10	53	356	42
S64	6	4	25¼	200	50
S65	6	5	31½	232	50
S66	6	6	38	263	50
S67	6	7	44¼	296	50
S675	6	7½	47½	312	50
S68	6	8	53	328	50
S610	6	10	67¼	392	50
S654	6½	4	29¾	220	57
S655	6½	5	37¾	255	57
S656	6½	6	44¾	290	57
S657	6½	7	55	325	57
S6575	6½	7½	59	342	57
S658	6½	8	63	359	57
S6510	6½	10	78¾	428	57
S74	7	4	31¼	242	65
S75	7	5	43½	279	65
S76	7	6	52¼	317	65
S77	7	7	63¾	354	65
S775	7	7½	68½	373	65
S78	7	8	73	392	65
S710	7	10	91¼	466	65
S84	8	4	47	287	85
S85	8	5	59½	330	85
S86	8	6	71¼	373	85
S87	8	7	83½	416	85
S875	8	7½	89½	437	85
S88	8	8	95¼	458	85
S810	8	10	119¼	544	85
S94	9	4	60¼	335	100
S95	9	5	75½	383	100
S96	9	6	90½	431	100
S97	9	7	105¼	480	100
S975	9	7½	113¼	503	100
S98	9	8	128¾	527	100
S910	9	10	151	623	100
S104	10	4	74½	386	135
S105	10	5	93	439	135
S106	10	6	111¾	493	135
S107	10	7	130½	546	135
S1075	10	7½	139¾	573	135
S108	10	8	149	600	135
S1010	10	10	186½	706	135
.....	....	....	.....	...	...

Round Storage or Cistern Tanks

All of these tanks are well made from selected lumber, and if properly set up will not leak. These tanks are furnished with round hoops fitted with malleable iron lugs. The capacities are based on tanks with straight staves; if tanks are wanted with taper staves, information will be sent. Prices given do not include covers.

One-half inch round hoops, or flat hoops of equal strength on all sizes of tanks up to 8x8 feet. Five eighths inch round hoops or flat hoops of equal strength on 8x8-foot to 12x12-foot tanks. 2-inch material is recommended for tanks 8x8 feet and larger.

Standardized List Applying to 1½ and 2-inch Cypress, 1½ and 2-inch Fir Tanks

No.	Length of Staves Feet	Diam. of Bottoms Feet	No. of Hoops	Capacity Barrels	Weight Pounds	Price Each
404	4	4	4	9.8	250	**$27.30**
405	4	5	4	15.6	350	**36.80**
505	5	5	4	20.0	400	**44.40**
506	5	6	4	25.2	500	**52.80**
507	5	7	4	40.0	600	**64.80**
508	5	8	4	52.4	725	**75.60**
606	6	6	5	35.4	550	**63.70**
607	6	7	5	48.6	700	**75.20**
608	6	8	5	63.9	800	**87.90**
707	7	7	6	57.3	800	**85.80**
708	7	8	6	75.3	900	**99.70**
806	8	6	6	48.1	725	**79.70**
807	8	7	6	66.0	825	**93.80**
808	8	8	6	86.5	1000	**117.50**
809	8	9	6	110.4	1145	**132.90**
810	8	10	7	136.8	1250	**155.90**
812	8	12	7	190.0	1500	**192.10**
908	9	8	7	98.2	1085	**131.20**
909	9	9	7	124.9	1245	**147.80**
1007	10	7	8	82.8	1000	**124.70**
1008	10	8	8	109.6	1200	**143.60**
1009	10	9	8	141.5	1350	**163.70**
1010	10	10	8	172.8	1550	**189.60**
1012	10	12	8	215.0	1850	**225.80**
1208	12	8	9	132.5	1400	**172.30**
1210	12	10	9	208.9	1775	**214.40**
1212	12	12	9	253.6	2000	**258.10**

Weights given are for 1½-inch cypress and 1½-inch fir tanks. Add 25 per cent for weight on 2-inch cypress and 2-inch fir tanks.

Flat Covers for Round Tanks

Diam. Feet	No. of Hinged Lids	Price Each	Diam. Feet	No. of Hinged Lids	Price Each
4	1	**$6.35**	**8**	2	**$28.50**
5	1	**8.65**	**9**	2	**35.30**
6	1	**11.75**	**10**	2	**43.60**
7	2	**22.50**	**12**	2	**61.50**

Conical Covers for Round Tanks

Diam. Feet	Price Each	Diam. Feet	Price Each	Diam. Feet	Price Each
6	**$16.50**	**8**	**$24.75**	**10**	**$38.00**
7	**21.60**	**9**	**33.50**	**12**	**50.00**

Prices on special sizes upon application.

Butler Galvanized Round Stock Tanks

BUTLER
SENIOR
ZINCGRIP STOCK TANK
BUTLER MFG. COMPANY
KANSAS CITY, GALESBURG, MINNEAPOLIS

Made of zincgrip steel. Sides are one piece with only one vertical seam.

Senior tanks are made of full 20-gage in both bottom and sides. **Junior tanks** are made of full 20-gage in the bottom and full 24-gage in the sides.

Dimen., Ft. Diam. Depth	Cap. Bbls.	Size Steel Tube Top In.	Weight, Lb. Senior	Weight, Lb. Junior
3 x1	1½	1¹⁄₁₆	34	30
3 x1½	2¼	1¹⁄₁₆	42	35
3 x2	3	1¹⁄₁₆	50	40
3½x2	4	1¹⁄₁₆	58	48
4 x2	5	1¹⁄₁₆	70	57
4½x2	7	1¹⁄₁₆	80	67
5 x2	8½	1¹⁄₁₆	92	79
5½x2	10½	1¹⁄₁₆	107	91
6 x2	12½	1¹⁄₁₆	122	104
6½x2	14¾	1¹⁄₁₆	138	117
7 x2	17¼	1¹⁄₁₆	155	132
7½x2	20	1¼	171	150
8 x2	22¾	1¼	193	165
9 x2	29	1¼	250	240
10 x2	36	1¼	293	283
11 x2	43¾	1¼	348	314

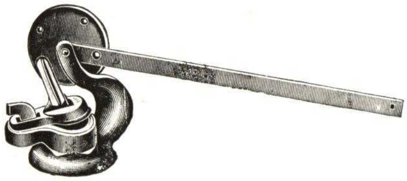
Sectioned Tanks

Round stock tanks, too large for shipping set up, are made in sections. Edges are punched so that when halves are joined, the holes will match. Packing and bolts are furnished and when seam is drawn up firmly, the tank is made watertight.

The following list, applying to large size Sectioned Tanks is based on 20-gage. For 18-gage, add 30 per cent, for 16-gage, 60 per cent to 20-gage prices. Prices on other gages and sizes on request.

No.	Diam. Feet	Depth Feet	Cap. Bbls.	Size Pipe Top In.	Approx. Wt. Lb.
R92	9	2	29	1	262
R102	10	2	36	1	304
R112	11	2	43¾	1	348
R122	12	2	52	1	395
R132	13	2	61¼	1	444
R142	14	2	71¼	1¼	498
R152	15	2	82	1¼	552
R162	16	2	93½	1¼	635

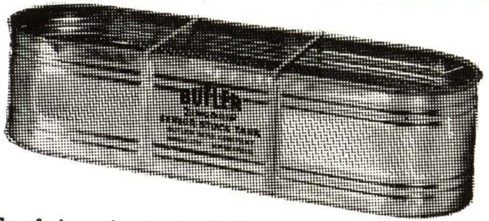
No. E-8711 McDonald Diamond Float Valves



Has wrought iron lever and brass valve seats. Wrought links, with copper rivets, connect lever with poppet. Leather faced poppet has a brass guide to keep it in position. Adjustable; changing the position of the lever makes it a float valve to be used for bottom, side or top supply; also makes it an outlet valve for bottom or side of tank.

Furnished in the following sizes: ¾, 1, 1¼, 1½, 2, 2½, 3, 3½, and 4 inches.

Butler Galvanized Round End Stock Tanks



Made of zincgrip steel. Sides are one piece with only one vertical seam. Reinforced by a 1¹⁄₁₆-inch steel tube around the top.

Senior tanks are made of full 20-gage in both bottom and sides. Junior tanks are made of full 20-gage in the bottom and full 24-gage in the sides.

Dimensions, Feet			Cap. Bbls.	No. of Angle Iron Cross Braces	No. of Side Braces on Each Side	Weight, Lb.	
Width	Depth	Length				Senior	Junior
2	2	4	3	1	0	54	43
2	2	5	3¾	1	0	65	53
2	2	6	4½	1	0	76	61
2	2	7	5½	1	1	90	80
2	2	8	6¼	2	2	104	94
2	2	10	8	2	2	127	112
2½	2	4	3¾	1	0	59	48
2½	2	5	4¾	1	0	71	61
2½	2	6	5¾	1	0	83	68
2½	2	7	7	1	1	96	86
2½	2	8	8	2	2	113	103
2½	2	10	10¼	2	2	136	126
3	2	5	5½	1	0	75	65
3	2	6	7	1	0	87	77
3	2	7	8¼	1	1	103	93
3	2	8	9½	2	2	115	105
3	2	10	12¼	2	2	144	134
3	2	12	15	3	3	172	162
3	2	14	17¾	4	4	190	181
3½	2	5	6½	1	0	81	73
3½	2	6	8	1	0	94	92
3½	2	7	9¾	1	1	110	104
3½	2	8	11¼	2	2	124	122
3½	2	10	14¼	2	2	155	145
3½	2	12	17½	3	3	176	167
3½	2	14	20¾	4	4	217	202
4	2	8	12¾	2	2	146	. . .
4	2	10	16¼	2	2	176	. . .
4	2	12	20	3	3	211	. . .
4	2	14	23½	4	4	247	. . .
4	2	16	27¼	5	5	283	. . .
5	2	8	15½	2	2	157	. . .
5	2	10	20	2	2	196	. . .
5	2	12	24¾	3	3	237	. . .
5	2	14	29¼	4	4	277	. . .
5	2	16	33¾	5	5	318	. . .
6	2	8	18½	2	2	176	. . .
6	2	10	23¾	2	2	216	. . .
6	2	12	29¼	3	3	260	. . .
6	2	14	34¾	4	4	304	. . .
6	2	16	41	5	5	342	. . .

No. E-8713 McDonald Dubuque Float Valves

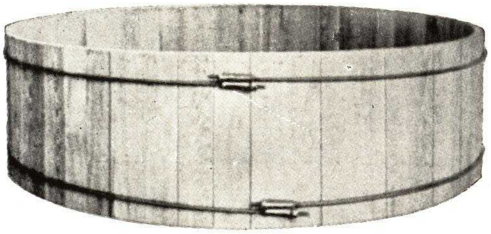
McDONALD-DUBUQUE

Body is cast brass, hexagon, with a concave seat on which the rubber ball makes a tight joint. The ball also acts as a check valve to prevent water from flowing back through the supply pipe. Lever is galvanized cast iron, so it will not rust; it is 18 inches long, giving the float ample power to close the valve when tank is full.

Cast brass bolt or thumb screw fastens lever to body. All parts are of anti-rust material.

Furnished in the following sizes: ¾, 1, and 1¼ inches.

Round Wood Tanks



When ordering state number of tank, length of stave, diameter of bottom and kind and thickness of lumber.

All tanks are shipped knocked down unless otherwise ordered. Prices include the staves, bottoms, dowel pins, hoops with lugs, etc. Price does not include covers.

Sizes listed below are for outside measurements.

Standardized List Applying to 1½ and 2 inch Cypress and 1½ and 2-inch Fir Tanks

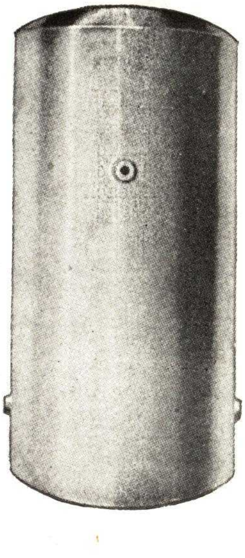
No.	Each	Length of Staves Feet	Diam. of Bottoms Feet	No. of Hoops	Capacity Barrels	Weight Pounds
104	**$16.90**	2	4	2	4.9	150
105	**23.20**	2	5	2	7.0	200
106	**29.40**	2	6	2	10.6	260
107	**36.30**	2	7	2	14.5	325
108	**43.40**	2	8	2	19.0	400
109	**50.60**	2	9	2	24.3	475
110	**60 90**	2	10	2	30.0	550
112	**77.70**	2	12	2	41.2	700
204	**19.30**	2½	4	2	5.9	200
205	**26.40**	2½	5	2	9.4	230
206	**32.80**	2½	6	2	13.7	300
207	**39.80**	2½	7	2	18.9	375
208	**47.00**	2½	8	2	24.8	450
209	**61.00**	2½	9	2	31.5	525
210	**73.00**	2½	10	2	39.1	625
212	**105.00**	2½	12	2	55.2	800
305	**32.20**	3	5	3	14.0	300
306	**42.35**	3	6	3	17.0	340
307	**51.70**	3	7	3	25.0	400
308	**60.00**	3	8	3	30.0	500
309	**70.00**	3	9	3	37.0	610
310	**82.00**	3	10	3	45.0	800
312	**112.00**	3	12	3	69.0	980

Weights given are for 1½-inch cypress and 1½-inch fir. Add 25% for weight on 2-inch cypress and 2-inch fir tanks.

McDonald Vertical Galvanized Steel Pneumatic Tanks

For Small Electric Pumps

***Tested to 150 Pounds Pressure**



An electrically welded, galvanized steel tank of heavy gage copper bearing steel.

Equipped with 1¼-inch inlet, 1¼-inch outlet, and 1¼-inch opening for automatic air volume control.

Tanks 30 and 36 inches in diameter, in addition to being tapped for air volume control, have two ½-inch tappings on 17½-inch centers, for water gauge—making it possible to use either air volume control, or water gauge—or both.

Capacity Gallons	Diameter Inches	Length Feet	Ship. Wt., Lb.
42	16	4	95
82	20	5	160
120	24	5	215
220	30	6	408
315	36	6	525

*Guaranteed for 75 pounds working pressure.

Black Pneumatic Pressure Tanks

Welded, Riveted, and Riveted Brazed For Domestic Water Supply Systems

75 Pounds Working Pressure
125 Pounds Test
Manufacturers' Standard Specifications Adopted Jan. 1, 1920

Furnished with preservative coating of grey spray paint.

Cap. Gals.	**Welded Tanks** Each	**Riveted Tanks** Each	Diam. In.	Lgth. Feet	Weight Welded Tanks Pounds	Weight Riveted Tanks Pounds
120	**$122.00**	**$122.00**	24	5	340	390
140	**135.00**	**135.00**	24	6	390	445
180	**161.00**	......	24	8	490	...
220	**199.00**	**199.00**	30	6	535	600
295	**233.00**	**233.00**	30	8	655	740
365	**267.00**	**267.00**	30	10	795	880
315	**235.00**	**235.00**	36	6	675	745
420	**279.00**	**279.00**	36	8	825	905
525	**323.00**	**323.00**	36	10	975	1060
630	**367.00**	**367.00**	36	12	1125	1225
735	**411.00**	**411.00**	36	14	1275	1385
575	**417.00**	**417.00**	42	8	1210	1430
720	**489.00**	**489.00**	42	10	1430	1690
865	**561.00**	**561.00**	42	12	1650	1950
1000	**633.00**	**633.00**	42	14	1870	2210
940	**596.00**	**596.00**	48	10	1690	2030
1130	**682.00**	**682.00**	48	12	1945	2325
1300	**768.00**	**768.00**	48	14	2200	2620
1500	**854.00**	**854.00**	48	16	2455	2915
1700	**940.00**	**940.00**	48	18	2710	3210
1880	**1026.00**	**1026.00**	48	20	2965	3505
2260	**1198.00**	**1198.00**	48	24	3475	4095

Net Extras

Manholes and Handholes

When extra or larger openings are required, they will be invoiced at the following net prices, provided openings are located in shell or in center of either head. Off-set flanges will be quoted on application.

Manhole in Head	each	**$19.50**
Manhole in Shell	each	**29.25**
Handhole in Head	each	**5.20**
Handhole in Shell	each	**5.20**

Galvanizing

Per Pound .... **$.05**

Threaded Flanges for Riveted Tanks

Size Flange Riveted........inches	2½	3	3½	4
Each	**$4.55**	**5.20**	**5.85**	**6.50**

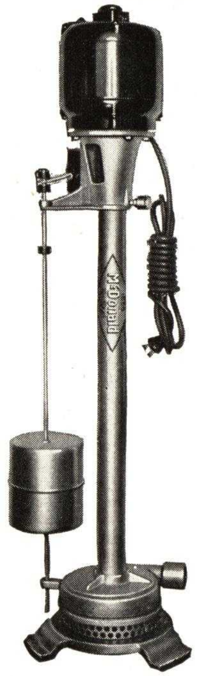
Threaded Welding Flanges for Welded Tanks

Size....inches	1	1¼-1½	2	2½	3	3½	4
Each	**$1.20**	**1.50**	**1.80**	**2.28**	**2.60**	**2.93**	**3.25**

No. CD1 McDonald Automatic Electric Sump Pumps

Centrifugal Type—Semi-Open Impeller With Overload Relay

¼-Hp. Motor—110 Volts, 60 Cycles, Split Phase



An all bronze cellar drainer, portable, quiet in operation, and fully automatic. Operates from any electric socket.

Designed for two foot tile or metal sump. Outfits for sumps of greater depth can be furnished.

Height of pump, 3⅓ feet. Pipe connection, 1-inch.

Cover, impeller and supporting standard are bronze, extra heavy and nonrusting.

Stainless steel impeller shaft with ball bearings minimizes lubrication.

Non-metallic lower bearings require no lubrication. Motor equipped with generously sized thrust bearings for vertical operation. Special motors can be furnished.

Overload relay protects motor against low voltage conditions.

Circular screen at pump base prevents heavy foreign matter from entering pump.

Moisture proof rubber covered cable, 10 feet long, with molded rubber plug, is standard equipment. Motor to switch wiring completely enclosed.

Shipping weight, 71 pounds.

Discharge Head.........feet	**6**	**10**	**14**	**20**	**22**
Approx. Capacity.......gph.	2800	2600	2200	1350	900

Model 46 Penberthy Automatic Electric Sump Pumps

¼-Hp. Motor—110 Volts, 60 Cycles—1750 RPM.

Induction type motor with built-in overload protection. Specially impregnated to resist moisture. Equipped with grease sealed precision bearings for vertical operation. Practically free from complicated working parts and radio interference.

Mercury switch has no mechanical contacts to wear or spark, mounted within sturdy housing, cast integral with motor end bell providing complete insulation for all wiring. Switch is controlled by extra heavy copper float sliding freely on supporting column, sensitive to slightest difference in water levels.

Double shroud impeller designed to eliminate vertical thrust. Tobin bronze impeller shaft guided at lower end by special bronze alloy bearing protected from abrasive matter in sump water by built-in automatic packing.

Pump is constructed of copper and bronze throughout. It is of the top suction submerged type, equipped with strainer of ample area. Height, 3 feet, 4½ inches.

Pipe connection, 1¼ inches; sump depth, 2 feet.

Total discharge head equals the vertical distance from water level in sump to point of discharge plus all head lost by pipe friction.

Capacity, against a total discharge head of:

1 Foot	gallons per hour	3000
5 Feet	gallons per hour	2600
10 Feet	gallons per hour	2200
15 Feet	gallons per hour	1600
20 Feet	gallons per hour	800
22 Feet	gallons per hour	400

Shipping weight, 60 pounds.

Model **46**..each **$52.50**

Model M Penberthy Automatic Electric Sump Pumps

¼-Hp. Motor—110 Volts, 60 Cycles—1750 RPM.

Capacitor type special vertical motor with built-in overload protection. Has double sealed ball thrust bearing in lower end. Insulation provides maximum resistance to moisture and corrosion. Practically free from radio interference.

Mercury switch has no mechanical contacts to wear or spark, mounted within sturdy housing, cast integral with motor end bell providing complete insulation for all wiring. Switch is controlled by extra heavy copper float sliding freely on supporting column, sensitive to slightest difference in water levels.

Double shroud impeller designed to eliminate vertical thrust. Tobin bronze impeller shaft for 1M, 2M and 3M; monel metal for 4M and 5M.

Pump is of copper and bronze construction throughout. Pipe connection, 1½ inches.

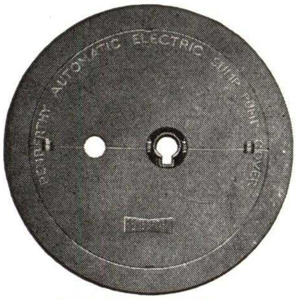
Total discharge head equals the vertical distance from water level in sump to point of discharge plus all head lost by pipe friction.

Capacity, against total discharge head of:

1 Foot	gallons per hour	4000
5 Feet	gallons per hour	3700
10 Feet	gallons per hour	3100
15 Feet	gallons per hour	2400
20 Feet	gallons per hour	1500
23 Feet	gallons per hour	400

Model	1M	2M	3M	4M	5M
Each	**$68.00**	**89.00**	**105.00**	**130.00**	**155.00**
Sump Depth...feet	2	3	4	6	8
Height Pump...feet	$3\frac{7}{16}$	$4\frac{7}{16}$	$5\frac{7}{16}$	$7\frac{7}{16}$	$9\frac{7}{16}$
Ship. Weight....lb.	102	115	128	149	195

Penberthy Ring and Split Sump Covers



Ring and Split Cover

For automatic electric sump pumps and automatic cellar drainers.

Designed with proper clearance for automatic control mechanism. Will hold pumps suspended in center of sumps of unusual depth. Furnished to fit standard sewer crock sumps from 15 to 24-inch. The No. 1 size cover is made of 2 halves bolted together and fits the inside of a standard 18-inch sewer crock.

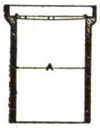
Additional outer rings furnished for 21 and 24-inch crocks.

Specify cover number and size of electric pump or water operated drainer.

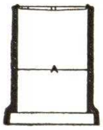
No.	1	2	3
Each	**$8.50**	**12.00**	**15.00**
Outside Diameter...inches	19¾	24	27½
Shipping Weight...pounds	28	47	58

Dimensions

Cover in Bell End of Crock



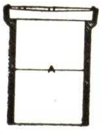
Size Crock, Dimension A. inches	18	21	22	24
No. of Sump Cover	1	2	2	3



Cover Over Small End of Crock

Size Crock, Dimension A. inches	18	21	22	24
No. of Sump Cover	1	2	2	3

Cover Over Top of Bell End of Crock



Size Crock, Dimension A.... inches	15	18	21
No. Sump Cover	1	2	3

Model R Penberthy Automatic Cellar Drainers

The Penberthy Automatic Cellar Drainer is of distinct service for installations such as office buildings, residence or factory basements, sumps, tanks, settling basins, flywheel, elevator, coal and scale pits or wherever it is desired to remove seepage, flood or back water from point below the natural drainage level of sewer.

Operates by water or steam pressure.

Constructed of copper and brass.

Pit should be placed so that all surplus water will drain to it.

No. 1 has ½-inch supply and 1-inch discharge; No. 2 has ¾-inch supply and 1¼-inch discharge.

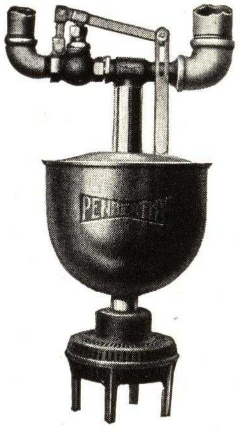
No. 1

Working Head Ft.	Each	Maximum Stock Drainer Capacities from Sump at 10 to 150 Pounds Water Pressure — Gallons per Hour 10	15	20	25	30	40	60	80	100	120	150
3	**$26.25**	80	210	300	340	400	510	700	720	700	660	600
6	**26.25**	...	90	140	240	300	390	570	670	690	650	600
9	**26.25**	...	...	90	150	210	330	480	620	660	640	600
12	**26.25**	...	...	...	100	150	220	390	550	630	630	600
15	**26.25**	...	...	...	...	90	190	300	450	600	620	600
18	**26.25**	...	...	...	...	...	120	250	320	550	610	600

No. 2

Working Head Ft.	Each	10	15	20	25	30	40	60	80	100	120	150
3	**$42.00**	190	390	550	620	750	910	1180	1240	1220	1170	1100
6	**42.00**	...	210	340	420	600	750	1020	1140	1200	1130	1100
9	**42.00**	...	...	210	300	380	540	900	1190	1150	1090	1100
12	**42.00**	...	...	...	210	300	420	780	1020	1110	1060	1100
15	**42.00**	...	...	...	...	210	370	570	940	1050	1030	1100
18	**42.00**	...	...	...	...	...	300	510	850	970	1000	1100

Model L Penberthy Automatic Cellar Drainers



For installations, such as office buildings, residence or factory basements, sumps, tanks, settling basins, flywheel, elevator, coal and scale pits, or wherever it is desired to remove seepage, flood or back water from point below the natural drainage level of sewer.

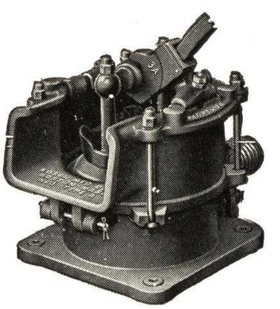
The capacities below are the actual capacities of water taken from sump and not the combined discharge of operating and drainage water. Five pounds or more water pressure is required for each one foot of elevation.

Special drainers suitable for conditions other than listed below can be furnished at no extra charge. Special drainers can be adjusted to operate on from 2 to 4 pounds water pressure. When ordering special drainers, give operating pressure, elevation of discharge, etc.

No.	Supply Pipe In.	Suction & Discharge	Working Head Ft.	Capacities Gallons from Sump per Hour — Water Pressure Lb. per Square Inch 15	20	30	40	60	Each
3	1	1½	3	450	600	800	1100	1400	**$57.75**
3	1	1½	6	...	...	650	860	1200	**57.75**
3	1	1½	9	...	...	....	720	1000	**57.75**
3	1	1½	12	...	...	....	....	800	**57.75**
4	1¼	2	3	600	800	1200	1600	2000	**84.00**
4	1¼	2	6	...	....	1000	1240	1800	**84.00**
4	1¼	2	9	...	....	....	1040	1600	**84.00**
4	1¼	2	12	...	....	....	....	1200	**84.00**
5	1½	2½	3	750	1000	1600	2100	2700	**115.00**
5	1½	2½	6	...	....	1300	1620	2300	**115.00**
5	1½	2½	9	...	....	....	1260	1900	**115.00**
5	1½	2½	12	...	....	....	....	1500	**115.00**

Edson Diaphragm Suction Pumps

Side Inlet—Type A



This pump will raise water containing sand, gravel, or sewage matter, or anything liquid enough to flow. Adapted for use by contractors and by city and town sewer departments water works, railroads, foundation and bridge builders.

The hinge construction makes it easy for one man to open the head to insert diaphragm. It insures the head going back exactly where it belongs, with lugs properly aligned, and without displacing diaphragm.

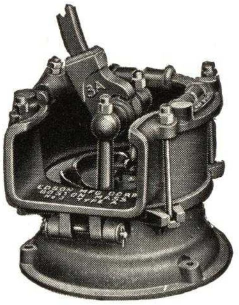
The beveled rim around outer circumference of top of base properly centers the diaphragm.

The groove in top of base to receive corresponding bead on diaphragm, helps to center diaphragm and also makes a tight fit, thus insuring full suction of water instead of leakage of air through under the diaphragm.

No.	Suction Pipe, In.	Style of Thread	Capacity per Hour Gallons	Number of Men Required
2	2½	Hose or Std. I. P.	1800	1
3	3	Hose or Std. I. P.	4000	1
4	4	Standard I. P.	6000	1

Edson Diaphragm Suction Pumps

Bottom Inlet—Type A



Used for ships, scows and other vessels; also for filling tanks for railroad and street sprinklers, or wherever a stationary pump of large capacity by hand power is required. Will raise anything liquid enough to flow.

The hinge construction makes it easy for one man to open the head to insert the diaphragm. It insures the head going back exactly where it belongs, with lugs properly aligned and without displacing diaphragm.

Bevelled rim around outer circumference of top of base properly centers the diaphragm.

Groove in the top of the base to receive corresponding bead on diaphragm, helps to center diaphragm and also makes a tight fit, thus insuring full suction of water instead of leakage of air through under the diaphragm.

No.	Suction Pipe, In.	Style of Thread	Capacity per Hour Gallons	Number of Men Required	Each
2	2½	**Standard I. P.**	1800	**1**	**$25.30**
3	3	**Standard I. P.**	4000	**1**	**33.00**
4	4	**Standard I. P.**	6000	**1**	**50.00**

Goodyear Wingfoot Water Hose

WINGFOOT
GOODYEAR
WATER

Available in 3-braid for heavy duty service in mines, highway construction, greenhouses, etc.; and 2-braid for service where abrasions are minimum. Molded braided construction, unusually flexible, non-kinking and lightweight. Long continuous lengths make heavy connecting couplings unnecessary. Tube is seamless, resistant to weak acid or alkaline water. Reinforced with husky cotton braids separated by layers of ply-bonding rubber that also prevent yarn chafing. Smooth black stock cover.

Size....................inches	**½**	**¾**	**1**	**1¼**	**1½**
No. of Braids..................	2	2	2	3	3
Nominal O.D............inches	⅞	1⅛	1$^{33}/_{64}$	1⅞	2$^{1}/_{16}$
Working Pressure............lb.	200	160	150	150	160

No. 77 Sherman Hose Couplings

Heavy Wrought Brass

This heavy wrought brass coupling with accurate machine-cut threads, deep, clean corrugations and fine appearance, comprise the universal standard of the very highest quality in garden hose couplings.

Available in ½, ⅝, ¾ and 1-inch sizes.

Approximate weight per dozen, 2 pounds.

No. 77CL Sherman Long-Grip Hose Couplings

SHERMAN LONG-GRIP

Wrought brass body, rustproof fingers. Cut thread.

Packed 12 in a carton.

Weight per dozen, 1½ pounds.

Size........................inches	**½**	**⅝**	**¾**
No. 77CL..............per dozen	**$4.60**	**4.60**	**4.60**

No. 12CL Sherman Long-Grip Hose Menders

Makes a tight, permanent connection. One-piece wrought brass body, rustproof steel finger member with right-angle finger ends with concave tips, for deep biting ends. No hub or collar. Plated fingers.

Size......inches	**½**	**⅝**	**¾**	**1**
No. 12 CL...per doz.	**$1.50**	**1.50**	**1.50**	**4.44**
No. in Ctn......	24	24	24	12
Weight.......lb.	2	2	2	3

No. 22 Sherman Cast Brass Water Hose Couplings

Sizes ½ to 1 inch have octagon nut without lugs. Sizes 1¼ to 2½ inches have lugs on female swivel only. The 3-inch size and larger have lugs on male and female swivels.

Size Inches	Per Dozen	Length Tail Inches	Weight per Doz. Pounds
½	**$3.30**	1⅛	3
¾	**3.30**	1⅛	3¼
1	**6.50**	1⅜	6
1¼	**10.00**	1½	9
1½	**14.00**	1½	13¼
2	**24.00**	2	25½

Size Inches	Per Dozen	Length Tail Inches	Wt., Lb. per Doz.
2½	**$48.00**	2¼	39
3	**75.00**	3	75
3½	**120.00**	3⅝	96
4	**150.00**	4	128
5	**250.00**	4⅝	183
6	**500.00**	5¾	285

No. 24 Sherman Cast Brass Steam Hose Couplings

Used for steam and air hose, or other purposes where extra precautions must be used to prevent blowing off or leakage.

Long shank permits the use of more than one clamp on each end.

Always furnished with iron pipe thread.

Size Inches	Per Dozen	Length Tail Inches	Weight per Doz. Pounds	Size Inches	Per Dozen	Length Tail Inches	Weight per Doz. Pounds
3/8	$15.00	2	5 3/4	1 1/2	$30.00	4	30
*1/2	15.00	2 1/2	6	2	42.00	4 1/4	44
5/8	15.00	2 5/8	7 1/4	2 1/2	72.00	5	69
3/4	15.00	3	8	3	148.00	5	105
1	18.00	3 1/4	13 1/4	4	300.00	9	255
1 1/4	24.00	3 1/2	21 1/4	...	......	...	...

*1/2-inch size always furnished with 3/4-inch I.P. thread unless otherwise specified.

No. 19 Brass Male Hose Nipples

Unless otherwise specified, these nipples will be furnished with hose thread on one end and taper iron pipe thread on the other.

When 1/2-inch nipples are ordered, they will be sent 1/2 inch taper iron pipe and 3/4-inch hose thread, unless otherwise specified.

Size Inches	Male per Doz.	Male Reducing per Doz.	Weight Pounds per Doz.
3/8	$3.50	.....	2 1/4
1/2	3.50	.....	2 1/4
3/4	3.50	$3.50	2 1/2
1	6.50	6.50	4
1 1/4	9.00	11.25	6
1 1/2	10.00	12.50	7 1/4
2	14.00	17.50	11
2 1/2	28.00	35.00	16 1/2
3	40.00	50.00	27
3 1/2	50.00	62.50	35
4	75.00	93.25	45

No. 18 Sherman Male and Female Hose Nipples

Hose thread male end and taper iron pipe thread female end unless otherwise specified.

Size Inches	Per Dozen	Weight per Doz. Pounds	Size Inches	Per Dozen	Weight per Doz. Pounds
1/2	$3.50	2 1/4	2	$14.00	12
3/4	3.50	2 1/2	2 1/2	28.00	20
1	7.15	3 1/2	3	40.00	27
1 1/4	9.00	5 1/2	3 1/2	50.00	35
1 1/2	10.00	8 1/2	4	75.00	45

No. 5 Brass Double Female Nipples

This nipple has hose thread in one end and taper iron pipe thread in the other end.

Size...............inches	1/2x3/4	3/4	1
Per Dozen..............	$3.50	3.50	7.15

Galvanized Steel Hose Clamps

A hose clamp with a uniform, tight grip. Pliable band portion can be opened up, removed and used again.

Lawn, water and 1/2-inch steam hose clamps have round head bolts. Steam hose clamps 3/4-inch and larger have hexagon head bolts. Extra heavy suction and tank hose clamps have square head bolts.

Lawn and Air Hose Clamps

Size In.	Hose Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.	Size In.	Hose Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.
3/16	3	$.54	7/16	2	3/8	5/8	3	$.54	1	2	1 1/8
1/4	3	.54	1/2	2	5/8	5/8	4	.54	1 1/8	2	1 1/4
3/8	2	.54	9/16	2	3/4	3/4	2	.54	1 1/16	2	1 1/4
3/8	3	.54	5/8	2	3/4	3/4	3	.54	1 1/8	2	1 1/4
3/8	4	.54	11/16	2	3/4	3/4	4	.54	1 3/16	2	1 1/4
1/2	2	.54	3/4	2	7/8	3/4	5	.54	1 1/4	2	1 3/8
1/2	W	.54	13/16	2	7/8	1	2	.78	1 5/16	2	1 1/2
1/2	3	.54	7/8	2	1	1	3	.78	1 3/8	2	2
1/2	4	.54	15/16	2	1	1	4	.78	1 7/16	3	3 1/4
1/2	5	.54	31/32	2	1 1/8	1	5	.78	1 1/2	3	3 3/8
5/8	2	.54	63/64	2	1 1/8	...	.	...	...	.	...

Water Hose Clamps

Size In.	Hose Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.	Size In.	Hose Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.
1 1/4	2	$1.48	1 5/8	3	4 3/4	2	5	$2.20	2 11/16	2	7 1/2
1 1/4	3	1.48	1 11/16	3	4 3/4	2 1/4	3	2.64	2 3/4	2	8 1/4
1 1/4	4	1.48	1 13/16	3	5	2 1/4	4	2.64	2 13/16	2	8 1/2
1 1/4	5	1.48	1 7/8	3	5 1/2	2 1/4	5	2.64	2 7/8	2	8 5/8
1 1/2	2	1.76	1 15/16	3	5 1/2	2 1/2	3	2.90	2 15/16	2	8 5/8
1 1/2	3	1.76	2	3	5 1/2	2 1/2	4	2.90	3	2	8 3/4
1 1/2	4	1.76	2 1/8	3	5 1/2	2 1/2	5	2.90	3 1/8	2	9
1 1/2	5	1.76	2 3/16	3	7 1/2	2 3/4	4	3.96	3 1/4	1	5 1/4
1 3/4	3	2.10	2 1/4	2	6 1/2	3	3	4.62	3 7/16	1	5 1/4
1 3/4	4	2.10	2 3/8	2	6 1/2	3	4	4.62	3 1/2	1	5 1/4
2	3	2.20	2 7/16	2	7	3	5	4.62	3 5/8	1	5 1/2
2	4	2.20	2 9/16	2	7	...	.	....	...	.	...

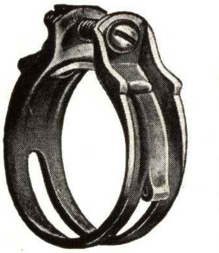
Steam Hose Clamps

Size In.	Hose Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.	Size In.	Hose Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.
1/2	3	$.84	1	6	5	1 1/4	4	$1.98	1 15/16	3	8
1/2	4	.84	1 1/16	6	5 1/4	1 1/4	5	1.98	2	3	8 1/2
1/2	5	.84	1 3/16	6	5 5/8	1 1/4	6	1.98	2 1/16	3	8 1/2
1/2	6	.84	1 1/4	6	5 5/8	1 1/2	4	2.42	2 1/4	3	9 1/2
3/4	3	1.10	1 5/16	3	4	1 1/2	5	2.42	2 5/16	3	9 1/2
3/4	4	1.10	1 3/8	3	4 1/4	1 1/2	6	2.42	2 3/8	3	10 1/4
3/4	5	1.10	1 7/16	3	4 1/2	2	4	3.74	2 5/8	2	8 1/4
3/4	6	1.10	1 1/2	3	4 1/2	2	5	3.74	2 3/4	2	8 1/2
1	3	1.70	1 5/8	3	7 1/4	2	6	3.74	2 7/8	2	8 3/4
1	4	1.70	1 11/16	3	7 3/4	2 1/4	4	4.18	2 15/16	2	9 3/4
1	5	1.70	1 3/4	3	7 3/4	2 1/4	5	4.18	3	2	10
1	6	1.70	1 13/16	3	7 3/4	2 1/4	6	4.18	3 1/16	2	10 1/2

Extra Heavy Clamps for Suction and Tank Hose

I.D. In.	Per Doz.	Doz. in Carton	Wt. Lb. per Ctn.	I.D. In.	Per Doz.	Doz. in Carton	Wt. Lb. per Ctn.
2 3/4	$4.24	1	4 1/2	4 1/4	$7.70	1	9
2 7/8	4.50	1	6	4 3/8	7.81	1	9 1/4
3	4.84	1	6 3/4	4 1/2	8.36	1	9 1/2
3 1/8	4.94	1	7 1/4	4 5/8	8.58	1	9 1/2
3 1/4	5.06	1	7 3/8	4 3/4	9.35	1	9 5/8
3 3/8	5.18	1	7 3/4	4 7/8	9.68	1	10
3 1/2	5.28	1	7 3/4	5	10.00	1	10 1/8
3 5/8	5.46	1	7 7/8	5 1/4	10.45	1	10 1/2
3 3/4	5.60	1	8 1/8	5 3/8	11.00	1	10 5/8
3 7/8	6.05	1	8 1/4	5 1/2	11.44	1	11
4	6.34	1	8 1/2	6	13.75	1	11 1/2
4 1/8	7.15	1	8 5/8	6 1/2	14.00	1	12

Sherman Brass Hose Clamps



Made of heavy wrought brass. Rustproof clear through.

Tongue runs in channel holding it close to hose and making a uniform grip. Band portion is pliable, grips tight, and can be opened up, removed, and used again.

Stiff ears cannot pull together at top when tightened, and also form a perfect nut lock.

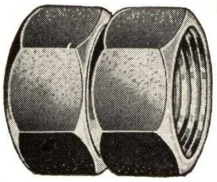
Heavy shoulder engages vise jaws, permitting clamp to be pulled tight.

Lawn and Air Hose Clamps

Size In.	Hose Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb. per Ctn.	Size In.	Hose Ply	Per Doz.	I.D. Open In.	Doz. in Ctn.	Wt. Lb per Ctn.
3/16	3	$.72	7/16	2	3/8	1/2	2	$.60	7/8	2	7/8
1/4	3	.72	1/2	2	1/2	1/2	3	.60	15/16	2	1
1/4	4	.72	9/16	2	1/2	5/8	3	.60	1 1/32	2	1 1/8
3/8	2	.72	5/8	2	1/2	5/8	4	.60	1 3/32	2	1 1/8
3/8	A	.72	11/16	2	5/8	3/4	3	.60	1 3/16	2	1 1/4
3/8	3	.72	3/4	2	5/8	3/4	4	.60	1 1/4	2	1 3/8

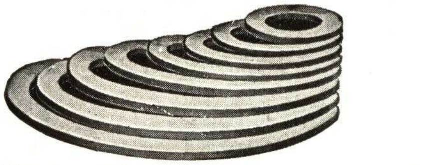
Water Hose Clamps						Steam Hose Clamps					
1	2	$2.00	1 11/32	2	3	3/4	3	$2.00	1 7/16	6	9
1	3	2.00	1 7/16	2	3	3/4	4	2.00	1 17/32	4	6 5/8
1	4	2.00	1 17/32	4	7 1/2	1	3	2.50	1 5/8	4	7
1 1/4	3	2.50	1 21/32	4	7	1	4	2.50	1 21/32	4	7
1 1/4	4	2.50	1 13/16	4	7 5/8	1 1/4	3-4	3.00	1 15/16	3	7 1/2
1 1/2	3	3.00	1 15/16	3	7 1/2	1 1/2	3-4	3.50	2 7/32	2	8 1/4
1 1/2	4	3.00	2 1/16	3	7 3/4	1 1/2	5	4.00	2 13/32	2	5 7/8
2	3-4	4.00	2 9/16	2	6 1/4	2	3-4	5.50	2 11/16	2	6 1/4
2 1/4	3-4	6.50	2 7/8	1	4	2	5	6.50	2 7/8	1	4 1/8
2 1/2	3-4	7.00	3 1/16	1	4 1/8	2 1/2	3-4	8.50	3 1/4	1	5
3	3-4	10.00	3 3/4	1	6	2 1/2	5	9.50	3 9/16	1	5 1/2

No. 91 Sherman Double Female Cast Brass Swivels



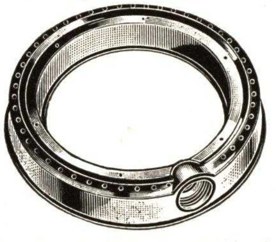
Thread Inches Hose I. P.	Each	Wt. Lb. per Doz.
3/4x 1/2	$6.00	2
3/4x 3/4	6.00	2 1/4
3/4x1	8.35	3 3/4
1 x1	15.40	5

Rubber Hose Washers



For Hose ½ Inch and Larger............per pound ....

No. 5041 Sherman Fountain Ring Lawn Sprinklers



Brass top and galvanized base 8½ inches in diameter. Inserted ¾-inch hose connection with clean-cut threads.

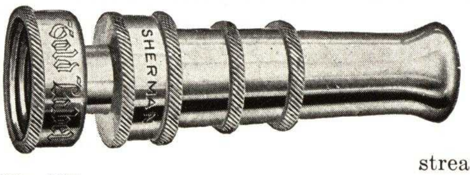
Waters 28-foot circle at 40 pounds pressure.

Packed 1 in a box, 6 in a carton.

Weight per dozen, 11¼ pounds.

No. **5041**............................per dozen **$15.00**

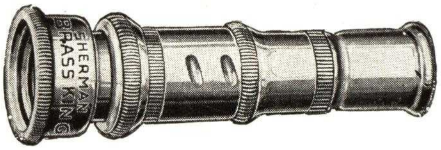
No. 155 Sherman Gold Label Hose Nozzles



For heavy duty service. Heavy cast bronze. Easily adjusted for spray, straight stream, or shut-off.

No. **155**..............................per dozen **$12.60**

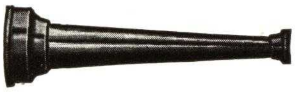
Sherman Brass King Hose Nozzles



Made in ¾-inch size only. Packed 12 in a carton. Weight per dozen, 2½ pounds.

Per Dozen...................................... **$4.20**

No. 8 Plain Hose Nozzles



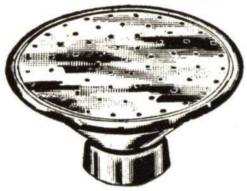
Made of cast brass.

All ¾-inch nozzles and pipes are furnished with hose thread unless otherwise specified. For all other sizes, thread must be specified.

Sizes ¾ and 1-inch packed in cartons.

Size......inches	3/4	1	1 1/4	1 1/2	1 1/2	2	2 1/2
No. 8.......each	$7.00	9.00	16.00	20.00	21.50	34.00	55.00
Length...inches	6	8	10	10	10	12	12
Discharge ...in.	1/4	5/16	3/8	1/2	5/8	5/8	1
Wt. per Doz..lb.	4	7 1/4	10 1/2	18	18	24	46 1/2

No. 1 Nelson Hot House Sprinklers



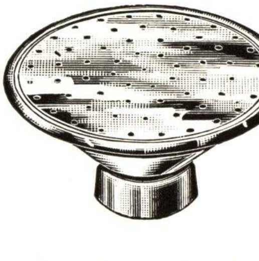
Stamped heavy sheet brass. Polished face. Emits a round spray.

Has ¾-inch hose connection with die cut threads.

Packed 12 in a box.

Diam. Face....inches	3	4
Wt. per Doz...pounds	2 1/4	4 1/2

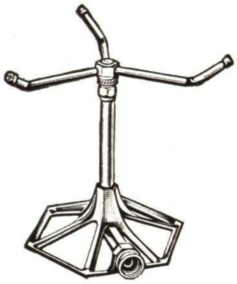
Sherman Wrought Brass Rose or Hot House Sprinklers



Entirely stamped from heavy sheet brass.

Made in 3 and 4-inch size face with ¾-inch hose thread.

Nelson Rotary Sprinklers

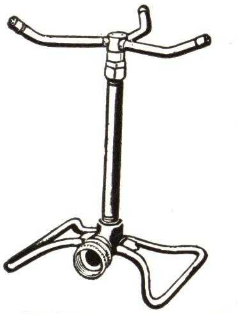


A 3-arm sprinkler that stands well up from the ground. Is 10 inches high; throws a spray covering a circle 40 to 50 feet in diameter on good pressure. The 6-inch arms are set with curved ends at exactly 45 degrees, maximum spraying angle. Shipped with head set up and no adjustment is necessary.

The special bearing makes smooth running and insures long life. Self-closing against leakage. Swivel, brass hose connection.

Packed 1 to a box, 1 dozen to a carton. Shipping weight per dozen, 38 pounds.

No. N-53 Clipper Lawn Sprinklers



Sprinkles a circle 25 to 40 feet in diameter, using 5 to 7½ gallons per minute.

Brass head with 4-inch brass arms.

Self-lubricating bearing for long wear.

Finished in bright red enamel.

Height, 9 inches.

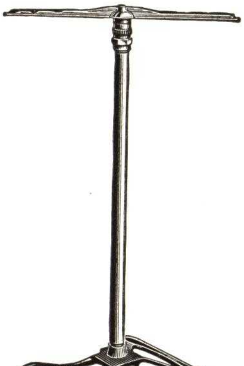
Base, 7 inches wide.

Shipped with head set up, ready to use. No adjustment necessary.

Packed 1 to a box, 1 dozen in a carton.

Weight per dozen, 20 pounds.

No. **N-53**................................per dozen **$12.60**



No. N-67 Queen Fairy Lawn Sprinklers

Head made of brass.

Sprinkles up to 50 feet in diameter.

Height, 25 inches.

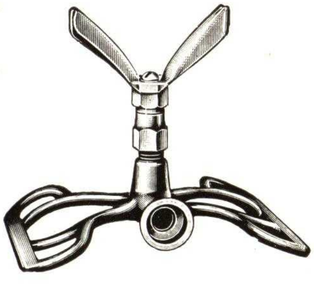
Base, 10 inches square.

Furnished with ¾-inch swivel brass hose connection.

Packed 1 in a box, 1 dozen in a carton.

Weight per dozen, 70 pounds.

Whirling Bunny Sprinklers



Head made of solid brass with self lubricating graphite bronze bearing ring.

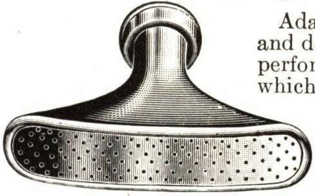
Will sprinkle evenly up to 40 feet in diameter. Will stand any amount of knocking around. The bearing will last indefinitely. It will whirl on any pressure from 5 pounds up.

Base 7 inches wide.

Packed 1 to a box.

Weight per dozen 16 pounds.

Junior Flaring Rose Sprinklers

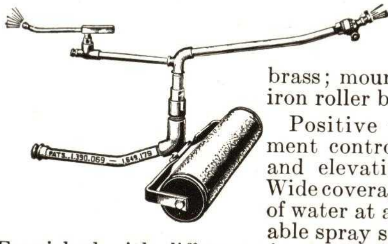


Adapted for sprinkling flowers and delicate foliage. Has 107 small perforations in sheet-brass face which emit a fanlike sheet of tiny jets. Non-corrosive die-cast body. Size 1¼x5 inches.

Packed 6 to a box.

Wt., per doz., 5 pounds.

Nelson Lark Sprinklers



A portable sprinkler for large area watering. Made of brass; mounted on easy moving iron roller base.

Positive worm gear adjustment controls speed of rotation and elevation of main stream. Wide coverage. Even distribution of water at any pressure. Adjustable spray screw on large nozzle. Furnished with different size nozzles as follows. Shipped with 3/16-inch nozzle for 25-pound pressure unless otherwise specified.

Size Nozzle	in.	**3/16**	**3/16**	**¼**	**¼**	**5/16**	**⅜**
Flowing Pressure	lb.	15	25	25	40	50	75
Diam. Spray	ft.	60	75	85	100	125	150
Gal. per Min		6½	7½	13	15	22	37

No. 20 Nelson Rain Bird Sprinklers

Body made of cast brass and nozzles of brass rod. All parts are of brass with exception of bearing pin which is made of stainless steel. For use on golf courses and underground or portable pipe irrigation systems.

Of the slow rotating type driven by an oscillator arm actuated outward by stream and brought back through stream by torsional spring, causing impact against main stream nozzle, thus propelling rotating member forward. Has ½-inch male connection.

Wt., standard nozzle ½ lb.; adjustable nozzle ¾ lb.

Nozzle	inches	**3/16**	**3/16**	**5/32**	**5/32**	**⅛**	**⅛**
Pressure	pounds	50	35	40	25	35	20
Gal. per Min		7	5.8	4.4	3.4	2.7	2
Diameter	feet	84	80	80	75	75	70

No. 40 Nelson Rain Bird Sprinklers

For use on golf courses, estates and underground or portable pipe irrigation systems.

Of the slow rotating type, driven by an oscillator arm actuated outward by the stream and brought back through the stream by a torsional spring, causing an impact against the main stream nozzle, thus propelling the rotating member forward.

No interior parts to interrupt the flow; all moving parts are slow moving. Working parts on the outside.

RAIN BIRD SPRINKLER
40

Has ¾ inch male connection.

Weight, 2¼ pounds.

Nozzle Inches	Pres. Lb.	GPM.	Diam. Feet
9/32x7/32	40	21.4	115
9/32x7/32	60	26.1	127
¼x7/32	35	17.6	106
¼x7/32	50	21.2	118
7/32x3/16	30	12.8	95
7/32x3/16	45	15.9	108
3/16x⅛	25	7.1	85
3/16x⅛	40	9.2	96
5/32x3/32	25	4.7	82
5/32x3/32	35	5.6	87

No. **40**..............................each .....

No. 65 Nelson Part Circle Rain Bird Sprinklers

For use on golf courses, estates and underground or portable pipe irrigation systems.

Of the slow rotating type driven by an oscillator arm actuated outward by the stream and brought back through the stream by a torsional spring, causing an impact against the main stream nozzle, thus propelling the rotating member forward.

No interior parts to interrupt flow; all moving parts are slow moving. Working parts are on the outside.

Has 1 inch female connection. Weight 3¼ pounds.

Nozzle.........inches	5/16x7/32		9/32x7/32		1/4x7/32	
Pressure......pounds	50	60	40	55	35	50
GPM................	28	33	22	27	18	22
Radius...........feet	60	70	60	65	55	60

No. **65**....................................each .....

No. 70 Nelson Rain Bird Sprinklers

RAINBIRD SPRINKLER
MFG. CO.
NO
70

For use on golf courses, estates and underground or portable pipe irrigation systems.

Of the slow rotating type driven by an oscillator arm actuated outward by the stream and brought back through the stream by a torsional spring causing an impact against the main stream nozzle, thus propelling the rotating member forward.

Working parts are on the outside.

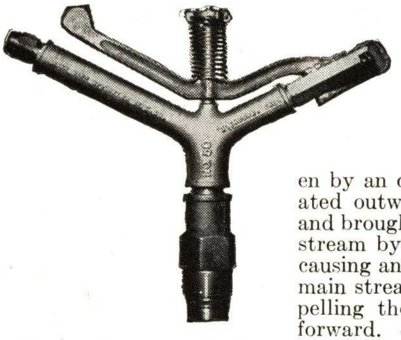
Has 1 inch connection.

Weight: male, 2½ pounds; female, 2¾ lb.

Nozzle......inches	3/8x1/4		5/16x7/32		9/32x7/32		1/4x7/32		7/32x3/16	
Pressure....pounds	60	75	50	65	40	55	35	50	25	30
GPM............	42	47	28	33	22	27	18	22	12	13
Diameter.....feet	158	168	142	154	127	139	115	128	90	100

No. **70**..each .....

No. 80 Nelson Rain Bird Sprinklers



For use on golf courses, estates and underground or portable pipe irrigation systems.

Of the slow rotating type driven by an oscillator arm actuated outward by the stream and brought back through the stream by a torsional spring, causing an impact against the main stream nozzle, thus propelling the rotating member forward.

No interior parts to interrupt flow; all moving parts are slow moving. Working parts are on the outside.

Has 1¼ inch male connection.

Weight 3¾ pounds.

Nozzle........in.	17/32x5/16		1/2x5/16		7/16x9/32		3/8x1/4	
Pressure.......lb.	75	100	70	90	65	80	60	75
GPM............	90	104	80	92	62	69	45	50
Diameter......in.	207	220	198	211	187	195	165	175

No. **80**..each .....

Pyrene Vaporizing Liquid Type Fire Extinguishers

Small Hand Pump Type

For use on all electrical fires and fires from oil, paint, or highly inflammable materials. Liquid is a non-conductor of electricity. Will not freeze at 50°F. below zero.

Packed, 1 pint and 1 quart, 12 in a package; 1½ quart, 6 in a package.

Pyrene
TO OPERATE

No.	Charged Each	Description	Cap.
C11	**$10.00**	Brass, Wall Bracket.....	1-Pt.
C11A	**10.50**	Brass, Auto Bracket....	1-Pt.
C14	**13.00**	Chrome, Wall Bracket...	1-Pt.
C14A	**13.50**	Chrome, Auto Bracket..	1-Pt.
C21	**15.00**	Brass, Wall Bracket.....	1-Qt.
C21M	**15.00**	Brass, Motorcycle Type.	1-Qt.
C21P	**15.00**	Brass, Airplane Type....	1-Qt.
C21T	**15.00**	Brass, Heavy Vehicle Type................	1-Qt.
C21TS	**16.00**	Brass, Heavy Vehicle, Post Bracket.........	1-Qt.
C24	**17.00**	Chrome Wall Bracket...	1-Qt.
C25	**14.00**	Colored Finish, Wall Bracket.............	1-Qt.
C31	**17.00**	Brass, Wall Bracket.....	1½-Qt.
C31T	**18.00**	Brass, Heavy Vehicle, Wall Bracket.........	1½-Qt.
C34	**20.00**	Chrome, Wall Bracket...	1½-Qt.
C35	**17.00**	Colored Finish, Wall Bracket.............	1½-Qt.

For price of extinguisher without bracket, deduct extra bracket prices shown below.

Extra Brackets

No.	Each	For Size Extinguisher	No.	Each	For Size Extinguisher
B1	**$.75**	1-Pt. Standard	B3T	**$2.00**	1-Qt. Truck (Clamp Type)
B1A	**1.50**	1-Pt. Auto (Clamp Type)	B3TS	**3.00**	1-Qt. Truck, Steering Post
B2	**1.00**	1-Qt. Standard	B4T	**2.50**	1½-Qt. Truck, Wall
B2B	**1.50**	1-Qt. Marine Brass	....	...	....

Pyrene Vaporizing Liquid Type Recharges

No. **CR1**, 1-Pint Can, 24 in Package...........each	**$.75**
No. **CR2**, 1-Quart Can, 24 in Package.........each	**1.50**
No. **CR10**, 2-Quart Can, 12 in Package........each	**3.00**
No. **CR4**, 1-Gallon Can, 4 in Package..........each	**5.40**
No. **CR5**, 20-Gallon Can, 1 in Package.........each	**100.00**
No. **CR6**, 50-Gallon Can, 1 in Package.........each	**250.00**

Pyrene Fire Extinguishing Liquid, dyed red, will be supplied when specified at no additional cost.

When ordering, specify colored finish or supply color sample.

Eastman Space Heater Connector Assemblies

Soft Annealed ⅜-Inch O.D. Copper Tubing

With Unplated Fittings

Assembly No. 1

½-Inch Female x ⅜-Inch Male—Male Tapped ⅛-Inch Female

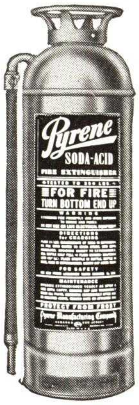
No.	**2912**	**2913**	**2914**	**2915**	**2916**
Each....................	**$.40**	**.45**	**.50**	**.55**	**.60**
Length...................in.	12	18	24	30	36
Weight per 100 Pieces....lb.	31	38	45	52	59

Assembly No. 2

½-Inch Female Gas Cock x ⅜-In. Male—Male Tapped ⅛-Inch Female

No.	**2922**	**2923**	**2924**	**2925**	**2926**
Each....................	**$.80**	**.85**	**.90**	**.95**	**1.00**
Length...................in.	12	18	24	30	36
Weight per 100 Pieces....lb.	60	67	74	81	88

Pyrene 2½-Gallon Soda-Acid Type Fire Extinguishers



(Formerly Essanay)

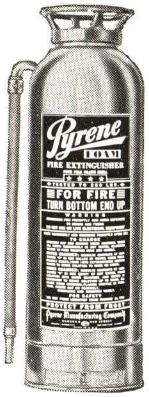
Labeled by Underwriters' Laboratories
Approved by Associated Factory Mutuals and U.S. Bureau of Marine Investigation and Navigation

Will extinguish incipient fires in free-burning materials where the cooling and quenching effect of water is of first importance. It throws a stream 40 feet in any direction. It should be protected against frost. Standard riveted shell.

Made of cold-rolled copper. The interior is completely coated with a lead-alloy.

*No. **SX13**, Polished Copper...each	**$26.00**
*No. **SX14**, Chromium-Plated..each	**31.00**
No. **SXR1**, Recharge, 24 in Pkg....each	**.50**
*With Pressure Relief Valve....add	**2.00**

Pyrene 2½-Gallon Foam Type Fire Extinguishers



(Formerly Fastfome)

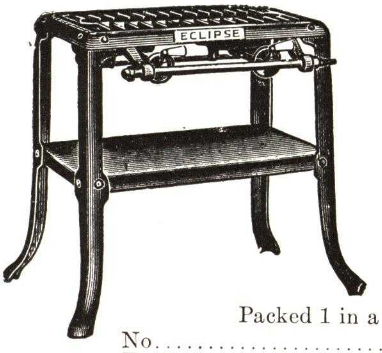
Labeled by Underwriters' Laboratories
Approved by Factory Mutuals and U.S. Bureau of Marine Inspection and Navigation

Blankets fire. It releases 22 gallons of tough fire-killing foam. The foam spreads rapidly over burning surface, cutting off supply of oxygen. Once extinguished, fire cannot reignite.

Standard riveted shell.

*No. **PX13**, Polished Copper.....ea.	**$29.00**
No. **PX14**, Copper, Chromium-Plated.....ea.	**34.00**
No. **PXR1**, Recharge, 12 in pkg...ea.	**1.60**

*Available with colored finish at same price. Specify color or supply color sample.



Eclipse Combination Gas Laundry Stoves and Hot Plates

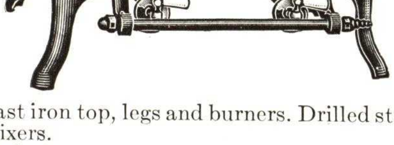
Heavy cast iron top, legs and burners. Drilled star burners with air mixers. Heavy sheet metal shelf.

Height, 20 inches.

Packed 1 in a fiber carton.

No.	2HB	3HB
Each	**$5.02**	**7.14**
No. of Burners	2	3
Size of Top....inches	11x19	11x27
Weight....pounds	24	32

Eclipse Gas Hot Plates



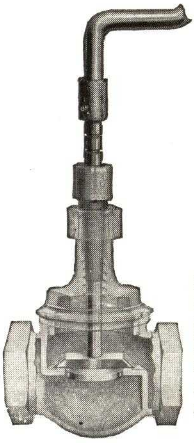
Heavy cast iron top, legs and burners. Drilled star burners with air mixers.

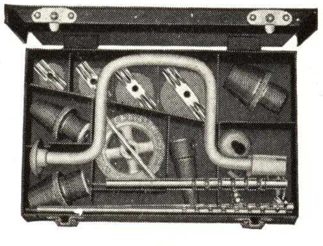
Height, 7 inches.

Packed 1 in a fiber carton.

No.	2B	3B
Each	**$3.96**	**6.00**
No. of Burners	2	3
Size of Top....inches	11x19	11x27
Weight....pounds	17	26

Skinner Valve and Bibb Steel Reseating Tools





Reseats flat and taper seat globe or angle valves, ¼ to ¾-inch bibbs, faucets, cocks, and small fixtures, in place, quickly and accurately. Useful where inaccessible globe valves, wall shower fixtures and other difficult jobs require reseating. Saves tearing out leaky valves and fixtures.

Cutter leaves the worn, old seat glass—smooth, level and absolutely accurate and tight. A guide pilot centers each cutter; a true taper cone centers each spindle.

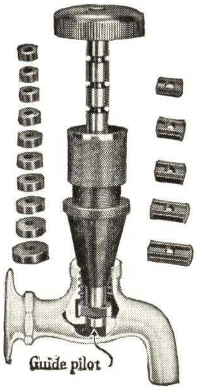
Screw feed holds cutter down to the work and prevents chatter. Low spots on the seat, grooves, and uneven places have no effect. The cutter rotates on a level plane and is advanced by slight turns of the feed screw until the job is finished. Stays in line during reseating.

If used with valves other than standard flat or 45° seats, specify make and figure number.

Packed in a neat enameled steel case, complete with operating instructions.

Size....inches	**2**	**3**
Each	**$24.16**	**35.19**
For Valves, Size....inches	¼ to 2	¼ to 3
Size Case....inches	2x6⅝x10	2x6⅝x13
Weight....pounds	8	10

Skinner Self-Aligning Bibb Reseaters



For reseating flat seat bibbs in place.

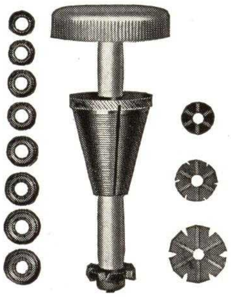
Perfect alignment. Guide pilot screwed on below cutter sets into seat opening and holds cutter to absolute center while taper chuck is being screwed in. Interior threads not necessary as fine hardened threads on tapered chuck engage any surface they meet and hold with a wedge grip.

Furnished with five Skinner cutters of hardened steel, guaranteed to stay sharp, and 12 pilots covering all makes of flat seat bibbs, ¼ to ¾ inch.

Packed in a strong canvas bag. Cutters and guide pilots are strung on a special wire clip.

Complete.....each **$5.28**

Skinner Bibb Seat Dressers



Reseats leaky faucets, leaving seat glass smooth, accurate, and tight.

Has eight alignment guide discs, which center cutters, holding spindle in perfect alignment while cone is being tightened.

Non-chatter cone fits any faucet.

Four patented hardened and ground steel cutters, ⅜, ½, ⅝, and ¾ inch.

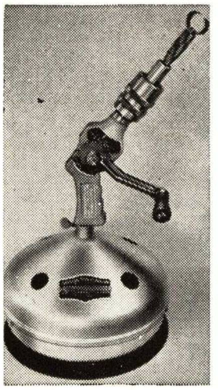
Chromium-plated handle and spindle.

Packed in a canvas bag.

Each..... **$1.58**

Model No. 500 Spartan Manu-Rod Waste Line Cleaning Machines

Hand Driven



No. 500

Combination Hook or Cutter Blade Ends

For removing stoppages in 1 to 4-inch waste and sewer lines. One-man operation. The Manu-Rod propeller enables the cable to be fed into the waste line until cable contacts the obstruction. Turning the handle revolves the cable and this rotary motion of cable cuts out stoppage or drives cable around and through the fittings. When stoppage is cleared, cable is pulled out of waste line and fed back in drum.

The Spartan rotating drum revolves on countersunk ball bearing. The unused portion of cable remains in the drum, revolving as the propeller is turned. Dual purpose cable—hook or cutter blades are interchangeable.

Cable is made from music wire of maximum tensile strength, closely wound. Guard prevents hands or clothing from catching in gear. Long handle provides power and ease of operation. Has oilite bearing and casehardened setscrews.

Propeller has long nozzle for easy access to hard to get at cleanouts. Hand powered, gear-driven. Handles all sizes of cable. Made from seamless steel tubing.

Four holes in drum permit airing and cleaning of cable.

Drum electro-plated to resist rust or corrosion. Drum rotates in countersunk combination radial ball bearing.

No.	Each	Description	Approx. Wt., Lb.
HP-301-S	$8.50	Propeller with Dble. Wheel Screw	2¾
MR-512-S	15.00	Propeller with MagiChuck........	4½
D-5000	12.50	Rotating Drum, 50 Ft. Cap.....	5½
D-7500	16.50	Rotating Drum, 75 Ft. Cap.......	6

Cables

No.	Each	Description	Approx. Wt., Lb.
R-0250-15	$6.50	*¼"x15' Cable with Blade End....	2
R-0250-25	11.00	¼"x25' Cable with Blade End....	3
R-0250-50	18.00	¼"x50' Cable with Blade End....	6
R-0250-75	24.00	¼"x75' Cable with Blade End....	8¾
R-0250-100	29.00	¼"x100' Cable with Blade End...	11½
R-0312-15	8.40	5/16"x15' Cable with Blade End....	3
R-0312-25	14.00	5/16"x25' Cable with Blade End....	4¾
R-0312-50	22.00	5/16"x50' Cable with Blade End..	9
R-0312-75	28.00	5/16"x75' Cable with Blade End...	13½
R-0312-100	38.00	5/16"x100' Cable with Blade End ..	18
R-0375-15	10.00	*⅜"x15' Cable, Dual Purpose.....	4
R-0375-25	18.00	⅜"x25' Cable, Dual Purpose.....	7
R-0375-30	20.00	⅜"x30' Cable, Dual Purpose.....	8
R-0375-50	29.00	⅜"x50' Cable, Dual Purpose.....	13
R-0375-75	39.00	⅜"x75' Cable, Dual Purpose.....	21
R-0375-100	48.00	⅜"x100' Cable, Dual Purpose....	30
R-0500-25	22.00	½"x25' Cable, Dual Purpose.....	12
R-0500-50	38.00	½"x50' Cable, Dual Purpose.....	22
R-0500-75	48.00	½"x75' Cable, Dual Purpose.....	30
R-0500-100	58.00	½"x100' Cable, Dual Purpose....	40

Cable Accessories

No.	Per Dozen	Description	Approx. Wt., Oz.
705	$1.50	¼-Inch Blade..................	2
709	1.50	5/16-Inch Blade..................	3
713	1.80	⅜-Inch Blade..................	4½
719	1.95	½-Inch Blade..................	10½
714	1.80	⅜-Inch Hook..................	13
715	1.95	½-Inch Hook..................	14

*¼ and 5/16-inch cable carry cutter blade only; ⅜ and ½-inch cable carry hook end and cutter blade

No. 600 Spartan Electro-Rod Pipe Cleaning Machines

Motor Driven

Light, compact and sturdy machine for cleaning out scale, corrosion, and stoppages in lavatories, sink lines, floor drains, boiler and condenser tubes, and many types of industrial process lines.

Grasping chuck releases rotating cable if cutting blades catch in an obstruction. Minimizes dangerous kinking and snapping of cable.

Releases tension with a touch. No time lost in keying chuck. Builds up torque which, when released, propels cutting blades at high speed, removing most difficult scale or stoppages.

Only two basic operations. Hold power unit in one hand; feed cable and control rotation through MagiChuck with other hand. No stopping, starting, reversing motor.

Power unit rests in cradle and couples to drum mounting when not in use. Easily carried and operated by one man.

Compact, electric driven power unit that goes right up to hard to get at cleanouts. Pistol grip with thumb-operated on-off switch for simple manipulation of power unit and cable. Self-aligning brass bearing, with ball bearing underneath, provide free frictionless drum rotation.

Efficient cutting blades of specially tempered steel interchangeable with wire hook for removing rags, waste, etc.

Flexible cable coiled from bright music wire; passes through 90° L's, T's, traps, with ease.

Self-energizing MagiChuck controls torque, or stored energy; gives touch control of cable tension. Has arm support for power unit in carrying and storing; swings down out of way for operating. Swivel-type trunnion arms support cable drum on sturdy steel stand; permit feeding cable straight at job in any direction. Special vent holes for aerating, easy cleaning, and drying of cable after use. Rotating drum of heavy gage spun steel, electroplated to resist rust. Furnished with 15 feet of sturdy, waterproof, rubber covered drop cord with Erickson plug.

Power unit is equipped with a Universal motor, a.c. or d.c., 115 volts, which revolves the cable at approximately 300 rpm. By loosening only two screws, the MagiChuck for controlling the cable may be replaced by a Jacobs Chuck and bit for wood drilling when installing new water lines, etc. When equipped with a complete assortment of cable, i.e., 5/16, ⅜ and ½ inch diameters, Electro-Rod becomes an extremely flexible tool for rodding lines and pipes from 1 to 4 inches in diameter. Electro-Rod can be equipped with specially tooled flexible shafting and attachments for cleaning, scraping, or brushing condenser tubes, process lines, water boiler piping, and other industrial maintenance or service uses.

When ordering, specify length of cable required.

Cable is available in following lengths and diameters:

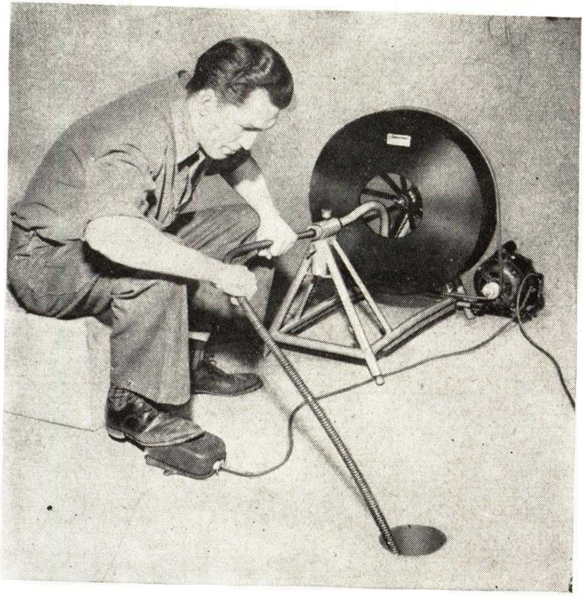
For Rodding Lines, In.	Cable, In.	Lgths., Ft.
1 to 1¼	5/16	25, 50, 75, 100
1½ to 2	⅜	50, 75, 100
3 to 4	½	50, 75, 100

Combination	Each	Equipped with Sewer Cable	Wt., Lb.
A	$105.00	⅜"x50'...........................	47
B	130.25	⅜"x50', ½"x50'.....................	70
C	137.00	⅜"x50', ½"x75'.....................	80
D	139.50	5/16"x25', ⅜"x50', ½"x50'............	74
E	145.00	5/16"x50', ⅜"x50', ½"x50'............	80
F	143.50	⅜"x50', ½"x100'....................	90
G	151.50	5/16"x50', ⅜"x50', ½"x75'............	90
H	116.25	½"x50'...........................	56

The ⅜ and ½-inch cable are dual-purpose, i.e., equipped with hook and cutter blade. The 5/16-inch cable is equipped with blade end only.

No. SE-800 Spartan Electric Sewer Cleaning Machines

¼-Hp. Capacitor, A.C. Motor—For 110, 220 V., 60 Cy.

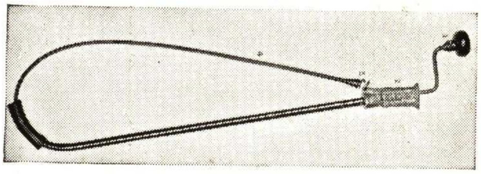


For cleaning lines from basements to main line sewers. Machine is easy to move; breaks down into three separate carrying parts. Flat top drum, holding 110 feet of ¾-inch coil spring cable can be rolled. 50-foot extension increases capacity to 160 feet or 210 feet if necessary. Drum and cable weigh only 130 pounds. Drum diameter, 24 inches. Width, 5 inches. Size of drum enables operator to pass it through basement window or small door. Machine is provided with foot control switch. Each blade is a complete assembly in itself, and is screwed on to end of cable. All sizes of blades attach directly to end of cable. This gives flexibility to cable, enabling operator to pass cutting blades through sharp bends or elbows in sewer line. Motor revolves cable 147 rpm. The rpm. may be increased by use of larger pulley if desired. Drum and crank arm revolve on two 4-inch bronze bearings. Cable can be pulled in or out of drum while machine is in operation. Flexible leader provides a tool that leads heavy duty cable around and through short bends and traps in sewer lines. Leader is attached to regular cable by means of a male connection. Enlarged bulb end bends sharply, thereby passing knife through trap or sharp elbow. To operate, measure distance from cleanout in basement to main line sewer. Attach 2-inch cutting blade to cable, passing it into sewer line. Keep both hands on cable at all times guiding cable into line and against obstruction.

No.	Each	Description	Wt., Lb.
SE-800	$310.00	Spartan Elec. Sewer Cleaning Machine, Equipped with ¾″x110′ Sewer Cable 2, 3, 4, 6″ Blades, Flexible Leader	225
SE-833-S	3.50	2-Inch Blade Assembly	*8
SE-835-S	3.60	3-Inch Blade Assembly	*11½
SE-837-S	3.85	4-Inch Blade Assembly	1
SE-839-S	4.10	6-Inch Blade Assembly	*18
SE-813	1.40	2-Inch Blade Holder	*4
SE-814	.70	2-Inch Blade Retainer	*1¾
SE-815	1.40	3-Inch Blade Holder	*7
SE-816	.70	3-Inch Blade Retainer	*2
SE-817	1.40	Blade Holder for 4 & 6″ Blades	*7
SE-818	.70	Blade Retainer for 4 & 6″ Blades	*4
SE-820	1.40	2-Inch Blade	*1½
SE-821	1.50	3-Inch Blade	*2
SE-822	1.75	4-Inch Blade	*4
SE-823	2.00	6-Inch Blade	*6
SE-840-8-S	6.25	¾″x8′ Sewer Cable with Conn.	8
R-0750-8	3.75	¾″x8′ Sewer Cable less Conn.	8
SE-840-50-S	30.00	¾″x50′ Sewer Cable with Conn.	52
R-0750-50	28.50	¾″x50′ Sewer Cable less Conn.	52
SE-840-102-S	51.25	¾″x102′ Sewer Cable with Conn.	105
R-0750-102	46.25	¾″x102′ Sewer Cable less Conn.	105

D.C. motor furnished on request. *Ounces.

No. 400 Spartan Closet Augers



Door knob top advances and turns auger in same movement.

Grip, shaped to fit hand to prevent turning.

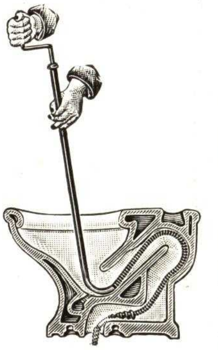
Replaceable spring, ½x39 inches.

Rubber guard on auger frame protects the bowl.

No. **400**, Closet Auger	each	**$8.00**
No. 405, Extra Spring	each	**3.50**

Coleman Flexible Coil Wire Closet Augers

Spring made of No. 12 gage wire, ½ inch size, with removable corkscrew and cone wire; assembled with steel handle and heavy steel tube.



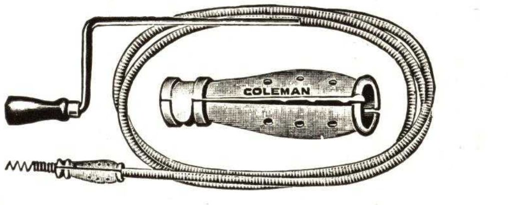
Grade A. A heavy duty cleaner. Flexible coil of special prepared non-corrosive Swedish spring steel music wire. Cadmium plated.

No.	**C-510**	**C-515**
Each	**$4.50**	**5.50**
Spring Lgth.......feet	3	6
Weight........pounds	3	4

Grade B. Spring of high grade special prepared oil tempered spring steel wire. All parts black enameled.

No.	**C-516**	**C-517**	**C-518**	**C-519**
Each	**$3.50**	**4.50**	**5.00**	**6.00**
Coil Lgth..ft.	3	6	9	12
Weight..lb.	3	4	5	6

Coleman Flexible Sewer and Pipe Augers



Nos. 530 and 535 are furnished with handles and cork screws and all connections. Made in ten-foot sections.

Nos. 520, 525 and 528, ⅜, ½ and ⅝-inch sizes, are made with corkscrew and handle complete. Each auger is also furnished with an automatic hand grip handle.

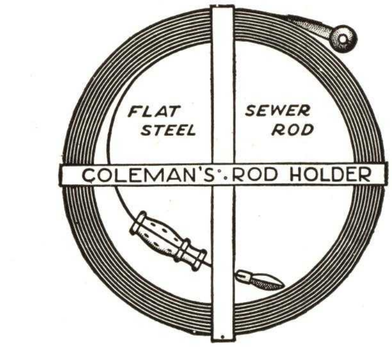
The ½ and ⅝-inch sizes are made so that the corkscrew and cone wires can be removed for using in smaller pipes.

No.	Size Inches	Lgth. Ft.	Wt. Lb.	Each
520A	3/16	10	1½	**$1.25**
		25	2	**2.25**
		50	4	**3.80**
		100	8	**6.80**
520B	¼	10	2	**1.55**
		25	3	**2.70**
		50	5	**4.25**
		100	9	**7.65**
520	⅜	6	2	**2.00**
		9	2½	**2.70**
		15	3½	**4.50**
		25	5½	**6.75**
		50	11	**10.20**
		100	21	**17.00**
525	½	6	3	**$2.25**
		9	4	**2.90**
		15	6	**4.95**
		25	10	**7.20**
		50	20	**12.75**
		100	40	**21.25**
528	⅝	15	10	**5.85**
		25	15	**8.10**
		50	30	**13.60**
		100	50	**25.50**
***530**	¾	10	10	**5.50**
***535**	1	10	11	**6.50**

Add for Extra 10-Foot Section for No. 530	each	**$5.00**
Add for Extra 10-Foot Section for No. 535	each	**6.00**

*Made in 10-foot sections.

Coleman Flat Steel Sewer Rods



For cleaning out straight sewers or drains. Of special oil tempered, flat spring, steel wire. Will coil and then lay flat for use in sewer.

Nos. C-532 to C-534A are fish tapes for electrical work; plain ends. No. C-536 has ball on end but no handle.

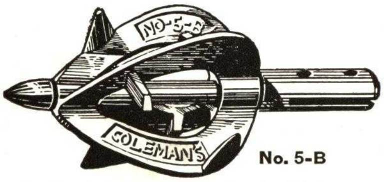
Nos. C-537 to C-542 have oval spear point, roller ball point and automatic grip handle.

Style No.	25-Ft. Length Each	Wt. Lb.	50-Ft. Lgth. Each	Wt. Lb.	*75-Ft. Lgth. Each	Wt. Lb.	*100-Ft. Lgth. Each	Wt. Lb.	Size Inches
C-532	$1.25	1	$1.75	2	$2.50	3	$3.50	4	1/8x.030
C-534	1.50	1 1/2	2.50	3	3.50	4	4.50	6	3/16x.030
C-534A	1.75	1 3/4	3.00	3 1/2	4.00	4 1/2	6.00	6 1/2	1/8x.060
C-536	1.85	2	3.50	4	5.00	6	7.00	8	1/4x1/16
C-537	2.40	3	4.50	6	6.00	9	8.00	12	1/2x1/16
C-538	4.00	4	6.00	8	8.00	12	10.00	16	3/4x1/16
C-538A	5.00	6	6.20	11	10.00	18	13.00	23	1/2x1/8
C-539	6.00	8	8.40	16	12.00	24	16.00	32	3/4x1/8
C-539A	7.00	12	10.20	22	13.80	32	18.90	42	1 x1/8
C-540	7.20	14	10.80	28	14.40	40	20.00	54	1 1/4x1/8
C-542	8.40	16	12.00	32	18.00	48	24.00	63	1 1/2x1/8

*Furnished with frame. Other lengths, 75 cents extra.

Revolving Spear Points

Made of two parts of certified malleable iron with hardened steel point on end of stem.



No. 5-B

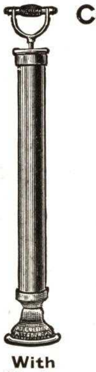
Cutting knives and grabs on revolving blades of spear will cut through fibrous roots, sand, gravel or any kind of removable stopage. Leaves sewers free of grease or any substance that sticks to inside of pipes.

No.	Each	Description	Diam. In.
3	$1.50	For 1/2-Inch or 3/4x1/16-Inch Rod	1 1/4
4	3.00	With Hooks, for 1/8-Inch Rod	2 3/4
4-A	4.50	With Root Cutting Blades	2 3/4
5-B	3.00	Cutting Blades for Heavy Rod	3 1/2
6	4.00	With Hooks, for 1/8-Inch Rod	4 1/4
6-A	6.00	With Root Cutting Blades	4 1/4

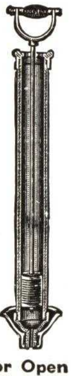
Coleman Improved Force Pumps

This is a powerful pump with a suction of 50 pounds and a force of 100 pounds or more. Made expressly for removing obstructions from plumbing fixtures. The large red rubber cup, with cast brass screw connections, is reversible, so that the same is adaptable for sinks with strainer and for open drains. It will cover any opening up to five inches in diameter. Pump barrel is made of seamless brass tubing. Piston, handle and all screw connections are cast brass. Piston packed with graphite packing rings.

Pump with Cup	each	$12.00
Cup only	each	1.50
Graphite Packing Rings	per set	1.50



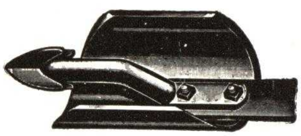
With Strainer



For Open Drain

No. 7 Coleman Root Cutters

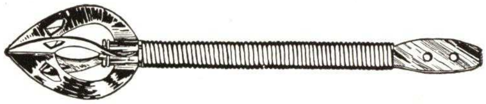
Used With Heavy Steel Rods



Made of steel one-half round, sharpened on both ends and assembled with a spear point lead which forces the roots to the side where they are cut off, and the spear drags them back to the opening.

No.		7-A	7-B	7-C
Each		**$3.00**	**4.00**	**5.00**
Diameter	inches	3 1/2	5 1/2	7 1/2
Length	inches	4 1/2	6 1/2	8 1/2
For Pipe	inches	4	6	8

No. 10 Coleman Revolving Flexible Spring Spear Point Heads

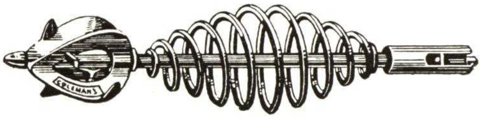


Has a 6-inch flexible spring attachment.

When connected to flat rods it is possible to turn sharp bends or go through traps.

No. 10-A, 1 1/4-In. Diam. for 1/2 or 3/4x1/16-In. Rod	each	**$3.00**
No. 10-B, 2 3/4-In. Diam. for any Heavy Rod	each	**4.50**
No. 10-C, 4 1/4-In. Diam. for any Heavy Rod	each	**5.50**

No. 11 Coleman Coil Spring Root Cutters



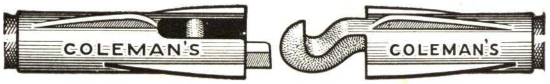
Made with a revolving head and followed up with a flexible flat spring coil that cuts roots close to the sides of pipe and scrapes off all grease, corrosion and rust, leaving drain pipe thoroughly clean.

No.		11-A	11-B	11-C
Each		**$6.50**	**8.00**	**9.00**
Revolving Head	inches	2 3/4	4 1/4	4 1/4
Coil Spring	inches	3 3/4	5 3/4	7 3/4
For Pipe	inches	4	6	8

Larger sizes made according to specifications.

Coleman Conduit and Sewer Rods

With Frictionless Couplings



Made of the best grade of hickory, in 3 or 4-feet lengths, coupled together with malleable iron couplings.

The four wings or planes on the coupling reduce friction and drag to a minimum.

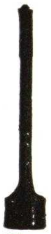
Nos. C-543 and C-543-A. For heavy duty; 1 1/8-inch round hickory dowel; couplings 1 1/8-inch diameter.

Nos. C-625 and C-675. For light duty; best grade 7/8-inch second growth hickory; 1-inch diameter couplings.

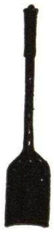
No.		C-543	C-543-A	C-625	C-675
Each		**$1.10**	**1.20**	**.90**	**1.00**
Diameter of Rod	inches	1 1/8	1 1/8	7/8	7/8
Length of Rod	feet	3	4	3	4
Weight of Rod	pounds	2	2 3/4	1 1/2	1 3/4

Coleman Rod Tools

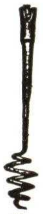
For Use With Sewer and Conduit Rods



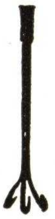
No. C-543-B Plunger



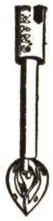
No. C-543-C Root Cutter



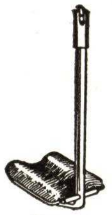
No. C-543-D Screw



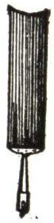
No. C-543-E Claw



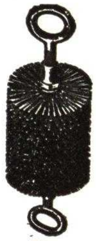
No. C-543-F Spear Point



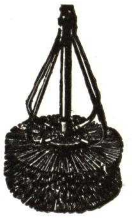
No. C-543-H Hinged Hoe Scraper



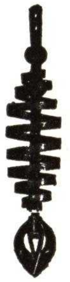
No. C-543-I Sand Scoop



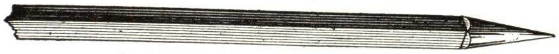
No. C-543-J Sewer Brush



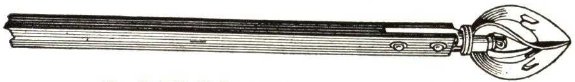
No. C-543-L Sewer Brush



No. C-543-K Root Cutter



No. C-543-M Straight Point Leader Rod



No. C-543-N Revolving Spear Point Leader Rod

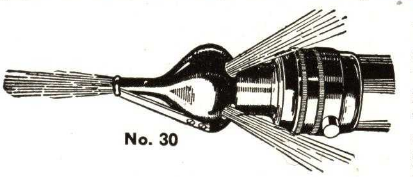
Used for cleaning out different kinds of stoppages from sewers and drains. Each tool is formed or shaped to make it easy to remove any stoppagewhen attached to any of Coleman Sectional Wood Sewer Rods.

When ordering give number and size shown under illustration. Specify which one of the Coleman Rods that tool is to be used with and tool will be made up with proper coupling. If tool is to be used with other than a Coleman rod, send a female connection for attachment.

No.	Description	Each
C-543-B	4-Inch Round Conduit Plunger	$5.00
C-543-C	4-Inch Half-Round Root Cutter	5.00
C-543-D	4-Inch Corkscrew	5.00
C-543-E	4-Inch Claw	5.00
C-543-F	2¾-Inch Revolving Spear Point With Hooks	5.00
C-543-G	4½-Inch Revolving Spear Point With Root Cutter Blades	6.00
C-543-H	Hinged Hoe, 4-Inch Size	5.00
	6-Inch Size	6.00
	8-Inch Size	7.00
C-543-I	Sand Scoop, 4-Inch Size	5.00
	6-Inch Size	6.50
	8-Inch Size	7.50
C-543-J	Steel Sewer Brush, 4-Inch Size	6.00
	6-Inch Size	10.00
	8-Inch Size	15.00
C-543-L	Steel Sewer Brush, 10-Inch Size	22.50
	12-Inch Size	27.50
	15-Inch Size	35.00
C-543-K	Rev. Head Spring Root Cutter, 4-Inch Size	6.50
	6-Inch Size	8.50
	8-Inch Size	10.00
C-543-M	Straight Point Leader Rod	3.00
C-543-N	Rev. Spear Leader Rod, 2¾-Inch Size Head	6.00
	4½-Inch Size Head	7.50

Coleman Revolving Nozzles

For 4-Inch Pipe to Largest Sewer



Automatically pulls itself into sewer drains and clogged pipes of various kinds. Preceded by a stream of water and propelled forward by other streams of water deflected to the rear. Deflected water washes out the drain when the tool is pulled back to the starting point.

Made of brass. With 2½ to 7½-inch National Standard hose thread, unless otherwise specified.

No. 30—Without Root Cutter

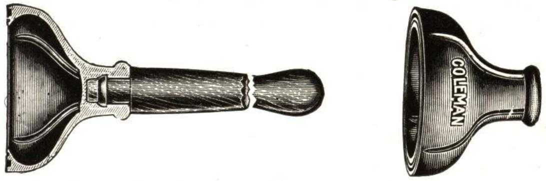
Length, 8¾ inches. Outside diameter, 3¼ inches.
No. **30**, Weight, 6¼ Pounds....................each **$40.00**

No. 40—With Root Cutter

Three blades are attached to wear-ring which protects the tool at point of greatest wear. Rapidly revolving, blades cut away the fibrous obstructions, and the water force, both forward and backward, washes all accumulations back to the opening.

Length, 8¾ inches. Outside diameter, 3⅝ inches.
No. **40**, Weight, 7 Pounds....................each **$45.00**

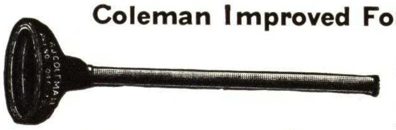
Improved Force Cups



A high grade cup for general use. The ribbing, inside and out, carries the weight, leaving the wall thin, making a pliable cup. Corrugations on bottom give a perfect seal, greatly improving the sucking and force action. Smooth hardwood 30-inch handle, connected to cup by socket, and cannot become detached.

No. **C-555**, 5½-inch Red Rubber Cup and Handle. . ea. **$1.25**
No. **C-560**, 5½-inch Black Rubber Cup and Handle.ea. **1.00**
No. **C-565**, 4½-inch Red Rubber Cup and Handle. . ea. **.75**
No. **C-570**, 4½-inch Black Rubber Cup and Handle.ea. **.65**

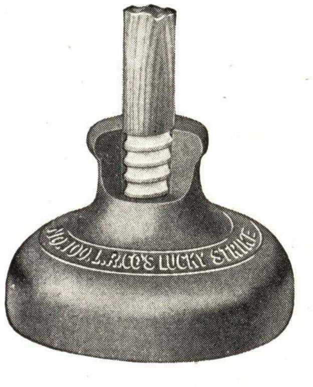
Coleman Improved Force Cups



Made of high grade red rubber with cast brass thimble and internal screw threads vulcanized into neck of cup to attach to hollow steel tubing handle.

Size cup, 5½ inches. Length of handle, 18 inches.
No. C**545**, Cup and Handle....................each **$2.00**
No. C**550**, Cup Only....................each **1.50**

No. 100LS Lucky Strike Force Cups


NO. 100. L. F. CO'S LUCKY STRIKE

Will not crack or harden with age. Not affected by cleaning solutions.

Cups have a threaded neck to engage with the threads in the wooden handle.

Low-down pattern. Has extra heavy wall around bowl and neck where strength is needed.

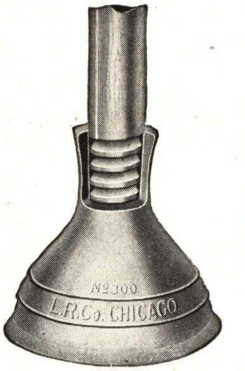
Size 5½ inches.

Furnished complete with 24-inch handles.

Standard package, 12.

Package weight including handles, 14 pounds.

No. 300LS Lucky Strike Force Cups



Made of high quality red stock.

Size, 4 inches.

Equipped with hardwood handle. Length, 24 inches.

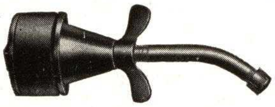
Handle is threaded at one end and holds securely when inserted in the cup.

Standard package, 12.

Package weight including handles, 10 pounds.

No. 9 Climax Soil Pipe Test Plugs

Wing Nut Type

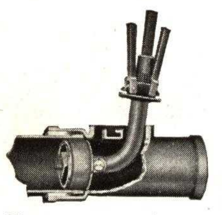


Makes perfect closure on standard or extra heavy soil pipe.

Size.......inches	2	3	4	5	6	8	10	12
No. **9**.......each	....	....	....	....	....	....	....	....

Blake Lightning Test Plugs

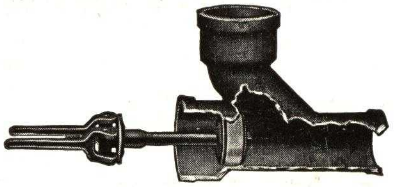
No. 140 Curved Single



Designed for instant insertion or removal. Handles locked in closed position as shown expand rubber ring, effectively sealing inside of tee for test. A few turns of handle and block assembly in open position lessens or increases expansion as desired.

Size..........inches	2	3	4	5	6	8
No. **140**........each	**$3.50**	**3.80**	**4.00**	**5.30**	**6.00**	**8.00**
Weight......pounds	5	6	7½	9	10	12

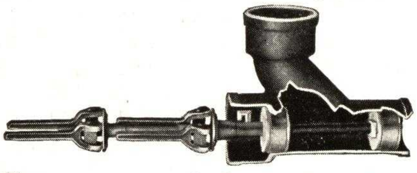
No. 145 Straight Single



Parts and design same as the No. 140.

Size..........inches	2	3	4	5	6	8
No. **145**........each	**$3.30**	**3.60**	**3.80**	**5.10**	**5.80**	**7.80**
Weight......pounds	4¼	6	6¼	8	10¼	12¼

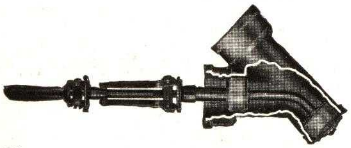
No. 150 Straight Double



Two sets of handles afford individual operation of each plug. Parts and design same as the No. 140.

Size.............inches	2	3	4	5	6
No. **150**............each	**$6.80**	**7.40**	**8.00**	**10.50**	**11.00**
Weight..........pounds	9½	12½	13	16	20

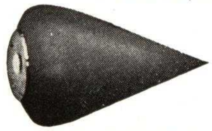
No. 155 Curved Double



Two sets of handles afford individual operation of each plug. Parts and design same as the No. 140.

Size.............inches	2	3	4	5	6
No. **155**............each	**$7.20**	**8.00**	**8.60**	**10.70**	**11.50**
Weight..........pounds	9½	13	13½	16	20

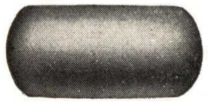
Plumbers' Lead Working Tools



No. 195 Hardwood Turn Pins

Sizes 1, 2, and 3, Dogwood.

No. **195**..................each **$.30**

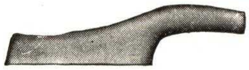


No. 85 Hardwood Drift Plugs

Sizes 1, 1¼, 1½ and 2 inches, Dogwood.

No. **85**..................each **$.15**

No. 84 Hardwood Dressers

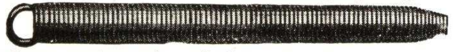


Length overall, 13¼ inches; face, 8 inches; width, 1⅞ inches.

	*Dogwood	Boxwood	Lignum Vitae
No. **84**..................each	**$1.25**	**1.40**	**2.35**
Weight per Dozen......pounds	11	12	13

*Also furnished 16 inches long, 2¼ inches wide, with 9½-inch face. Weight per dozen, 18 pounds. Each....... **$2.00**

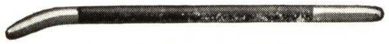
No. 7 Regular Pipe Bending Springs



Made from spring wire of the correct temper to prevent kinking. Length, 23 inches.

Size....................inches	¾	1	1¼	1½	2
No. **7**....................each	**$.55**	**.60**	**.80**	**.90**	**1.20**
Weight per Dozen......pounds	14	21½	31	41	58½

No. 5 Bending Pins

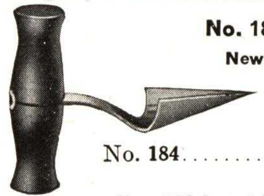


Made from round steel. Length, 13 inches.

Size....................................inches	½	9/16
No. **5**......................................each	**$.35**	**.45**
Weight per Dozen..........................pounds	12	15

No. 184 Tap Borers

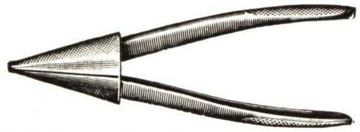
New York Pattern



Has heavy forged steel blade.

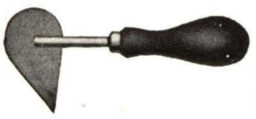
No. **184**.................................each **$.45**

No. 142 Lead Pipe Expanding Pliers



Made entirely from extra heavy pressed steel.

No. **142**...each **$4.00**

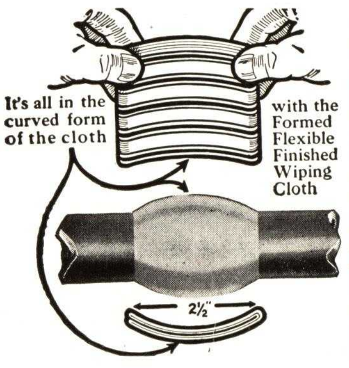


No. 164 Oval Shave Hooks

With malleable iron shank and heavy steel blade.

No. **164**......... ......each **$.40**

Williams Formed Wiping Cloths


It's all in the curved form of the cloth
with the Formed Flexible Finished Wiping Cloth
2½"

Ticking

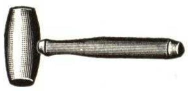
Made in the following sizes in inches:

4x4
Price..........each **$.50**
3½x3½ 3x3
3¼x3¼ 2½x3
Price..........each **$.40**
1¾x3 1½x3
Price..........each **$.30**

Moleskin

4x4
Price..........each **$.60**
3½x3½ 3x3
3¼x3¼ 2½x3
Price........ .each **$.50**
1¾x3 1½x3
Price........ ..each **$.40**

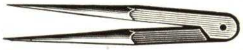
No. 114 Otto Bernz Plumbers Mallets



Made from dogwood. Size 3x6 inches.

Price, No. 114....................................each $.60

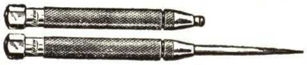
No. 83 Otto Bernz Plain Compasses



Made of steel with hardened points. Joint is fitted and made firm to insure accurate adjustments.

No..........	83-A	83-B	83-C	83-D	83-F	83-H	83-I
Per Dozen...	$5.00	5.40	6.00	6.60	9.20	12.60	16.00
Size.......in.	3	4	5	6	8	10	12
Wt. per Doz..lb.	1	1¼	1½	2¼	3¼	5¾	7

Lufkin Pocket Scribers



Made of steel tubing, knurled and nickel-plated. Illustration shows scriber open for use and closed, the point being removed and inserted into handle when not in use. It is firmly held in place by a knurled chuck. Point is of best quality steel, properly tempered, and shank is designed to be solidly held in handle when in use.

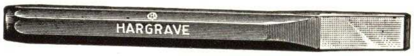
The hexagon head prevents rolling

Packed 6 in a box.

No......................................	87A	87B
Scriber Complete.....................each	$.50	$.70
Extra Scriber Points..................each	.20	.20
Diameter of Handle................inches	¼	⅜
Length of Point......................inches	2⅜	2⅞
Weight..............................ounces	½	1¼

No. 200 Hargrave Alloy Steel Cold Chisels

Individually Tested



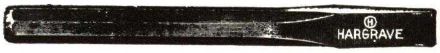
This chisel is made from a special analysis tool steel. It is forged out under the trip hammer, assuring much greater durability than can be expected of drop forgings.

Each tool is carefully tempered for the work for which it is intended and tested for hardness and toughness.

Size of steel is same as width of cutting edge.

Width Blade.in.	¼	5/16	⅜	½	⅝	¾	⅞	1
No. 200 per doz.	$3.00	3.30	3.60	4.20	5.00	6.60	8.00	10.00
Length......in.	5	5	5	6	6½	7½	8	8½

No. 205 Hargrave Extra Long Cold Chisel



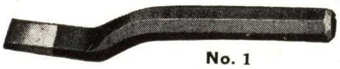
Made of alloy steel, power tested for proper hardness and toughness. Not widened at point. Black lacquer finish.

Packed in bulk.

Size, Inches Width Blade	Length	Per Dozen	Wt., Lb. per Dozen	Size, Inches Width Blade	Length	Per Dozen	Wt., Lb. Per Dozen
½	10	$5.00	7	1¼	18	$23.00	75
½	12	5.50	9	¾	24	13.00	36
⅝	12	6.50	12	⅞	24	15.00	48
¾	12	7.50	18	1	24	20.00	70
⅞	12	10.00	24	1¼	24	28.00	102
1	12	12.00	30	1½	24	48.00	146
¾	18	10.00	27	1¼	36	39.00	155
⅞	18	12.00	37	1½	36	64.00	222
1	18	15.00	47	...	..	.....	...

Plumbers' Tools

Stub Calking Irons

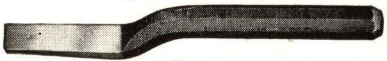


No. 1

Size, In.	Price, Each
8½x½	$.50
8½x⅝	.55
8½x¾	.60

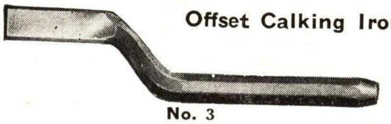
Regular Calking Irons

Size, In.	Price, Each
8½x½	$.50
8½x⅝	.55
8½x¾	.60



No. 2

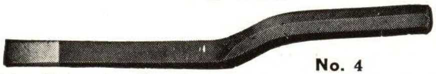
Offset Calking Irons



No. 3

Size In.	Price, Each 8-In.	Price, Each 10-In.
⅝	$.55	$.95
¾	.65	1.00

Yarning Irons

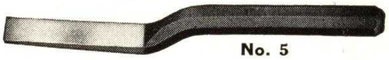


No. 4

Size, In.	Price, Each	Size, In.	Price, Each	Size, In.	Price, Each
½x10	$.50	⅝x10	$.55	¾x10	$.65
½x15	.65	⅝x15	.65	¾x15	.75

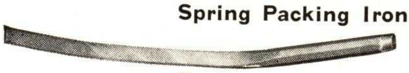
4-Inch Yarning Irons

Size, In.	Price, Each
9x⅝	$.70
9x¾	.75



No. 5

Spring Packing Irons

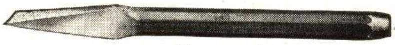


No. 6

Size, In.	Price, Each
12	$1.00
18	1.15

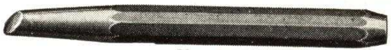
Cape Chisels

Size, In.	Price, Each
8½x½	$.75
8½x⅝	.80
8½x¾	.90



No. 7

Round Nose Chisels

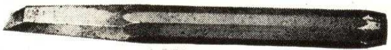


No. 8

Length Inches	Price Each
8½	$.85

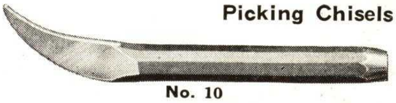
Diamond Point Chisels

Length Inches	Price Each
8½	$.85



No. 9

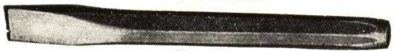
Picking Chisels



No. 10

Length Inches	Price Each
8½	$.90

Cold Chisels



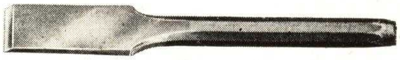
No. 11

Size of steel is same as width of cutting edge.

Width Blade..in.	¼	5/16	⅜	½	⅝	¾	⅞	1
Length........in.	5	5	5	6	6½	7½	8	8½
Per Dozen......	$3.00	3.30	3.60	4.20	5.00	6.60	8.00	10.00

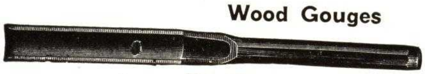
Wood Chisels

Size, Inches Steel	Lgth.	Cut	Price Each
⅝	10	1	$.90
¾	11	1½	1.15
¾	12	2	1.40



No. 12

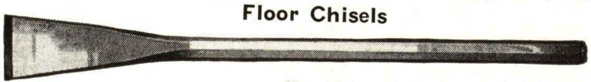
Wood Gouges



No. 13

Size, In. Length	Width	Price Each
10½	1	$1.15

Floor Chisels

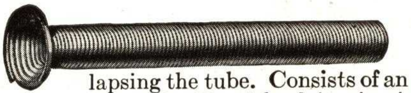


No. 14

Size, Inches Length	Width	Price, Ea.	Size, Inches Length	Width	Price, Ea.	Size, Inches Length	Width	Price, Ea.
12	1½	$.80	15	2½	$1.65	16	3½	$2.00
15	2	1.05	15	3	1.75	16	4	2.15

No. 102-F Imperial Tube Benders

External Type



Bends tubing by hand to any desired shape without collapsing the tube. Consists of an especially prepared spring wire coil. Furnished in six sizes to take copper, aluminum and other soft, thin-wall metal tubing. Springs have black protective finish. Belled end assures ease in removing from tubing after bend has been made.

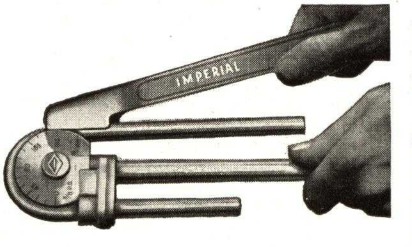
No.	**102-F**	**102-F**	**102-F**	**102-F**	**102-F**	**102-F**
Each	**$.25**	**.30**	**.35**	**.40**	**.45**	**.50**
Size.....inches	¼	5⁄16	⅜	7⁄16	½	⅝
Length..inches	10	10	10	12	12	12
Wt., Ea. ounces	3	3	4	6¼	6½	8

Sets

No. **101**-F, Set of 6, One of Each ¼, 5⁄16, ⅜, 7⁄16, ½, and ⅝-Inch Size..............................per set **$2.05**

No. **163**-F, Set of 4, One of Each ¼, ⅜, ½, and ⅝-Inch Size..............................per set **1.45**

No. 364-F Imperial Hand Tube Benders

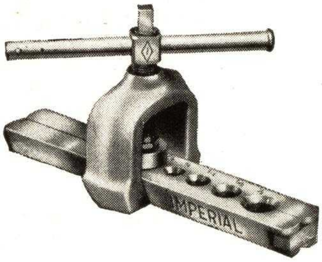


Used to make bends any angle up to 180° at the end or at any part of the tubing.

Calibrated to show degree positions. A different bender is required for each size of tubing except the 3⁄16-in. size which can also be used for the ⅛-in. size. Constructed of steel, lightweight. Bender in ⅝ and ¾-in. sizes slightly different in construction from smaller sizes.

O. D. Tubing...in.	**3⁄16**	**¼**	**5⁄16**	**⅜**	**½**	**⅝**	**¾**
No. **364**-F.....each	**$5.75**	**5.75**	**6.10**	**6.50**	**10.00**	**17.50**	**23.65**
Radius to Ctr. of Tube..in.	7⁄16	9⁄16	11⁄16	15⁄16	1½	2	2½
Weight....pounds	9⁄16	¾	1¼	1¾	9	10	10½

No. 295-FS Imperial Self-Clamping Flaring Tools



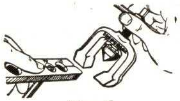


Fig. 1

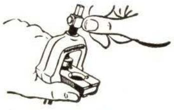


Fig. 2

For flaring soft copper, brass, and aluminum tubing in ¼, 5⁄16, ⅜, ½ and ⅝-inch outside diameter sizes. Has self-clamping feature which makes it easier and faster to operate.

Yoke of heat-treated steel forging and bar of casehardened steel.

To clamp tubing, spread bar at its free end and place tubing in proper opening, close bar and slide forged steel yoke onto it, see Figure 1. Bar is beveled on two outside edges, and yoke is tapered on each side to match. The tapered yoke automatically clamps bar to hold tubing in place. There are no nuts or other devices to be tightened, see Figure 2.

Rod handle on yoke can be removed and a ratchet wrench used when working in close quarters. Tool has swivel type flaring cone which makes operation easier especially when working with larger sizes of tubing.

Weight, complete, 1¾ pounds.

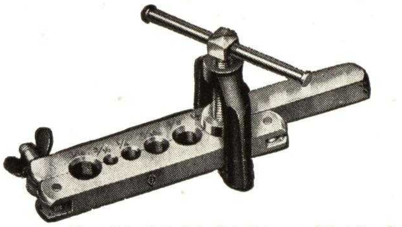
No. **295**-FS......................................each **$4.95**

No. **37677** Yoke Assembly; Weight, ¾ Pound...each **1.90**

No. **32532** Compressor Cone; Weight, ¼ Pound.each **.30**

No. **37688** Bar, Weight, ¾ Pound..................each **3.30**

Imperial Flaring Tools



Flares soft copper brass or aluminum tubing to make up S.A.E. joints.

No. 93-F. Yoke made of steel forging and furnished with cone which rotates with the screw. For 3⁄16, ¼, 5⁄16, ⅜, 7⁄16, and ½-inch tubing..each **$3.30**

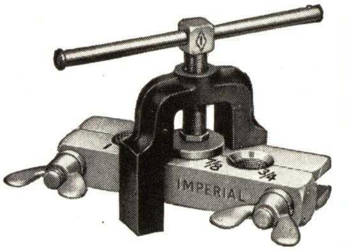
No. 95-F. Yoke made of steel forging and furnished with cone which rotates with the screw. Specially designed for sizes used in electrical refrigerator work—¼, 5⁄16, ⅜, ½, and ⅝-inch tubing..............................each **$4.40**

No. 95-FS. Same as No. 95-F, except with swivel cone which remains stationary, while screw is turned. each **$4.65**

Extra Parts

No.	Description	Each
33465	Yoke Assembly for Nos. 93-F and 95-F.......	**$1.35**
38379	Yoke Assembly for No. 95-FS................	**1.65**
30077	Bar for No. 93-F........................	**2.10**
30231	Bar for Nos. 95-F and 95-FS................	**3.25**
24461	Wing Nut................................	**.15**
25384	Compressor Cone for Nos. 93-F and 95-F.....	**.30**
32532	Compressor Cone for No. 95-FS..............	**.30**

No. 103-FS Imperial Flaring Tools



Used for ¾, ⅞ and 1-inch tubing on diesels, for plumbing work, refrigeration and other applications where larger sizes of tubing are involved.

Has quick slip-on yoke. Inside edges of yoke are slotted.

Wing nuts are equipped with swivel cups to minimize friction and give easy, secure tightening.

Yoke has swivel cone which remains stationary when screw is turned, aiding operation when working with larger sizes of tubing.

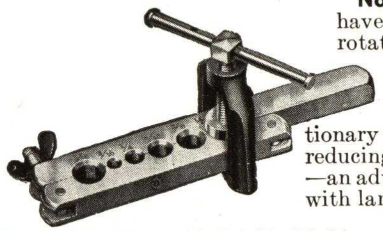
No. **103**-FS..................................each **$5.50**

Extra Parts

No.	Description	Each
38903	Yoke Assembly..........................	**$2.45**
38904	Compressor Cone only......................	**1.00**
38905	Bar Assembly............................	**3.30**
38588	Wing Nut................................	**.15**

Imperial Flaring Tool with Slip-On Yoke

Flares soft copper, brass, or aluminum tubing. Forged steel yoke.



Nos. 193-F and 195-F have a flaring cone which rotates with the screw.

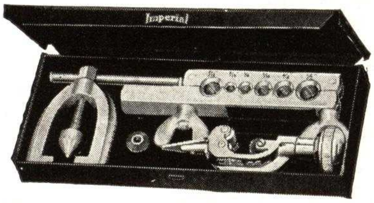
No. 195-FS has a swivel type cone which remains stationary while screw is turned, reducing friction when flaring —an advantage when working with larger sizes of tubing.

No. **193**-F Flares 3⁄16, ¼, 5⁄16, ⅜, 7⁄16, and ½-Inch O.D. Tubing..............................each **$3.50**

No. **195**-F, Flares ¼, 5⁄16, ⅜, ½, and ⅝-Inch O.D. Tubing..............................each **4.65**

No. **195**-FS, Flares ¼, 5⁄16, ⅜, ½, and ⅝-Inch O.D. Tubing..............................each **4.95**

Imperial Flaring and Cutting Tool Kits

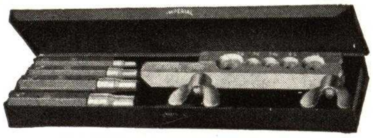


Contains the necessary tools for cutting and flaring jobs on copper, brass and aluminum tubing.

Packed in a steel box; approximate weight 3 pounds.

No. **225**-F. Contains No. 93-F flaring tool for 3/16, ¼, 5/16, ⅜, 7/16, and ½-inch outside diameter tubing; No. 174-F tubing cutter for ⅛ to ¾-inch outside diameter tubing; No. 32633 extra cutting wheel	each	**$6.75**
No. **1225**-F. Same as No. 225-F, except with No. 193-F flaring tool instead of No. 93-F	each	**7.00**
No. **226**-F. Consists of No. 95-F flaring tool for ¼, 5/16, ⅜, ½, and ⅝-inch outside diameter tubing; No. 174-F roller type tubing, cutter with flare groove for ⅛ to ¾-inch outside diameter tubing; No. 32633 extra cutting wheel	each	**7.85**
No. **1226**-F. Same as No. 226-F except with No. 195-F flaring tool instead of No. 95-F	each	**8.10**

Imperial Swedging Tool Kits



No. 195-S, Swedging Tool Kit

No. 93-S, Swedging Tool

For making joints without fittings. Emergency connections are quickly made with the handy tool kit shown. Two portions of tubing are joined by enlarging the inner diameter of one portion to permit the insertion of the other, and both portions are then soldered together.

No. **195-S**, Swedging Tool Kit, Including Flaring Tool Bar and 4 Swedging Tools for ¼, ⅜, ½, and ⅝-In. O.D. Tube, Complete in 3x9-In. Steel Case, Weight, 2 Pounds	each	**$6.80**
No. **193-S**, Swedging Set Includes 4 Swedging Tools for ¼, ⅜, ½, and ⅝-In. O.D. Tube	per set	**3.15**
No. **93-S**, Swedging Tool for ¼-Inch Tube	each	**.65**
No. **93-S**, Swedging Tool for 5/16-Inch Tube	each	**.70**
No. **93-S**, Swedging Tool for ⅜-Inch Tube	each	**.75**
No. **93-S**, Swedging Tool for ½-Inch Tube	each	**.90**
No. **93-S**, Swedging Tool for ⅝-Inch Tube	each	**1.00**
No. **93-S**, Swedging Tool for ¾-Inch Tube	each	**1.05**
No. **30231**, Flaring Tool Bar Only	each	**3.25**

Imperial Refacing Tools

IMPERIAL
1/4
5/16
3/8
1/2
5/8

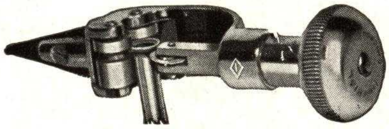
A defaced seat no longer necessitates replacing S.A.E. fittings. New faces can be quickly and correctly set into the old seat, assuring a tight and leak-proof fitting.

Five flutes on base of reamer insure a good clean cut, free from the usual chattering.

Its unusual construction takes adaptors for couplets of six sizes: ¼, 5/16, ⅜, 7/16, ½, and ⅝ inch.

No. 98-F Refacing Tool with Adaptors for ¼, 5/16, ⅜, ½, and ⅝-Inch Sizes	each	**$5.85**
No. 99-F Reamer Only	each	**3.75**
No. 100-F Adaptor Only (Specify Size)	each	**.55**

Imperial Tube Cutters



No. 174-F

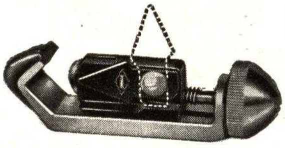
Cuts copper, brass, block tin, aluminum, Bundy steel and lead tubing.

Tube rests against 2 rollers, with vertical grooves, making it possible to remove only flare, which fits into groove so cutter blade cuts right at bottom. Has a high strength, light weight aluminum alloy body with polished finish. Knurled handle. Complete with reamer.

Approximate weight, ¾ pound.

No. **174**-F, For ⅛ to ¾-Inch O.D. Tubing	each	**$3.00**
No. **212**-F, For ⅛ to 1⅛-Inch O.D. Tubing	each	**3.50**

No. 127-F Imperial Junior Tube Cutters



Takes all sizes of metal tubing from ⅛-inch to and including ¾-inch outside diameter.

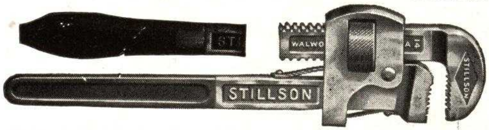
Makes a quick, clean, right-angle cut without the least flattening of the tube.

The dotted line shows the position of the reamer when in use. This is necessary when the tubing is not to be flared.

Approximate weight, ¼ pound.

No. 127-F	each	**$1.35**

Walworth Genuine Stillson Wrenches



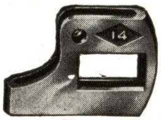
Sizes 6 to 48-inch, with steel handle; 6 to 14-inch, inclusive, also with wood handle. Made to new Federal Spec. GGG-W-651a for Type I Normal Duty Adjustable Pipe Wrenches.

Lengths 6 through 24 packed 6 wrenches per box.

Length Open Inches	**Compl. with Steel Handle** Each	**Compl. with Wood Handle** Each	Takes Pipe Inches	Wt. Lb.	Length Open Inches	**Compl. with Steel Handle** Each	Takes Pipe Inches	Wt. Lb.
6	**$1.90**	**$2.00**	⅛–½	.31	**18**	**$5.50**	¼–2	4.2
8	**2.20**	**2.30**	⅛–¾	.63	**24**	**9.50**	¼–2½	7.2
***10**	**2.85**	**3.15**	⅛–1	1.35	**36**	**20.00**	¼–3½	15.2
***14**	**3.85**	**4.25**	¼–1½	2.60	**48**	**30.00**	1 –5	23.7

*Furnished with steel handles, unless otherwise specified.

Extra Parts



Frame

14 WALWORTH MADE IN U.S.A.
STILLSON

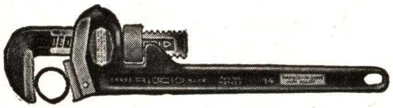
Jaw

Adjusting Nut

Steel Handle Bar

For Wrench In.	Bar with Springs Each	Jaws Each	Frame and Pin Each	Frame Pin Only Each	Adjusting Nuts Each	Wood Hdle. & Ferrule Each	End Nuts Each	Front Springs Each	Back Springs per Pr.	Spring Pins or Rivets Each
6	**$1.00**	**$.65**	**$.45**	**$.03**	**$.15**	**$.23**	**$.15**	**$.10**	...	**$.01**
8	**1.15**	**.70**	**.55**	**.03**	**.15**	**.25**	**.15**	**.10**	...	**.01**
10	**1.60**	**1.10**	**.70**	**.04**	**.20**	**.30**	**.20**	**.10**	**$.20**	**.02**
14	**2.20**	**1.50**	**.80**	**.04**	**.30**	**.36**	**.20**	**.10**	**.20**	**.02**
18	**3.25**	**2.15**	**.95**	**.04**	**.35**	...	...	**.10**	**.20**	**.02**
24	**5.15**	**3.50**	**1.75**	**.04**	**.55**	...	...	**.11**	**.22**	**.02**
36	**10.50**	**5.70**	**2.75**	**.05**	**1.10**	...	...	**.13**	...	**.02**
48	**17.00**	**9.00**	**3.50**	**.05**	**2.00**	...	...	**.13**	...	**.02**

Ridgid Straight Pattern Pipe Wrenches



Powerful all-alloy housing and handle; housing guaranteed not to break or warp. Chrome molybdenum jaws will not slip or lock on pipe. Replacement heel jaw, full-floating hook jaw with handy pipe scale. Adjusting nut spins easily in open housing in all sizes.

Packed 6 in a box, 6 to 24-inch inclusive.

Size In.	Each	Cap. In.	Wt. Lb.	Size In.	Each	Cap. In.	Wt. Lb.
6	$1.90	¾	½	18	$5.50	2½	5¼
8	2.20	1	¾	24	9.50	3	8¾
*10	2.85	1½	1¾	36	20.00	4½	16¼
12	3.35	2	2¾	48	30.00	6	28
†14	3.85	2	3½	60	45.00	8	43¼

*Complete with rubber grip, $3.15 each.
†Complete with rubber grip, $4.25 each.

Ridgid End Pattern Pipe Wrenches

TRADE RIDGID MARK
E14
HANDLE AND JAWS NOW ALLOY

For work where pipe is close to wall or in tight places. Powerful all-alloy handle and housing; housing guaranteed not to break or warp. Chrome molybdenum jaws will not slip or lock on pipe. Replaceable heel jaw, full-floating hook jaw with handy pipe scale. Adjusting nut spins easily in all sizes. Packed 6 in a box, 6 to 24-inch inclusive.

Size..in.	E6	E8	*E10	E12	†E14	W18	E24	E36
Each...	$1.90	2.20	2.85	3.35	3.85	5.50	9.50	20.00
Cap..in.	¾	1	1½	2	2	2½	3	4½
Wt...lb.	½	¾	1¾	2¾	3½	5¼	8¾	16¼

*Complete with rubber grip, $3.15 each.
†Complete with rubber grip, $4.25 each.

Parts for Ridgid Pipe Wrenches

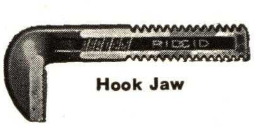
End Handle

Flat Spring

Coil Spring

Pin

Heel Jaw



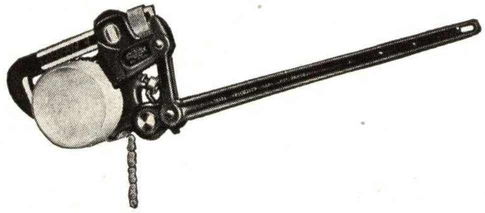
Hook Jaw

Nut

Straight Handle

Size In.	Handle Assembly Straight Each	Handle Assembly End Each	Hook Jaw Each	Heel Jaw & Pin Each	Pin Each	Coil Spring Each	Flat Spring Each	Nut Each	Rubber Grip Each
6	$1.75	$1.75	$.65	$.40	$.03	$.03	$.20	$.15	....
8	1.95	1.95	.70	.45	.03	.03	.20	.15	....
10	2.50	2.50	1.10	.55	.04	.03	.20	.20	$.40
12	2.85	2.85	1.25	.65	.04	.03	.25	.25	....
14	3.45	3.45	1.50	.65	.04	.03	.30	.30	.50
18	4.95	4.95	2.15	.75	.04	.04	.40	.35	....
24	7.95	7.95	3.50	.85	.04	.04	.50	.55	....
36	15.00	15.00	5.70	1.15	.05	.04	.60	1.10	....
48	25.00	.....	9.00	2.05	.05	.04	.80	2.00	....
60	35.00	.....	17.00	4.55	.05	.04	1.50	4.00	....

Ridgid Compound Leverage Pipe Wrenches



For use in turning pipe or fittings that are frozen and require additional leverage. Operated by putting trunnion on pipe, jaw on fittings (or vice versa), and pumping it on or off.

Made of Super-X alloy metal.

Multiplies leverage 14 times.

Short handle and short turning movement permits use of this wrench in close quarters too tight for ordinary wrenches—on concealed piping, close under floors, against walls or in narrow trenches.

No.	S-2	S-4	S-6	S-8
Complete Wrench.........each	$7.06	14.11	18.48	27.72
Capacity Pipe..........inches	14	36	48	60
Weight................pounds	6	28	40	60

Parts

No.	S-2	S-4	S-6	S-8
Trunnion Assembly.......each	$4.72	$9.39	$10.63	$15.98
Link Chain..............each	1.66	3.32	3.74	5.60
Vise Handle.............each	.62	1.25	1.25	1.87
Nut for Screw...........each	.57	1.19	1.19	1.76
Screw...................each	.57	1.19	1.19	1.76
Handle..................each	1.25	2.49	2.91	4.36
Head....................each	.83	1.66	2.91	4.36
Rivet...................each	.05	.10	.10	.15
Side Bar................each	.15	.36	.52	.78

No. 4111 Walco Pipe Wrenches

A heavy duty wrench forged of a high grade tool steel. The drop forging of the handle and the jaw housing in one piece is a feature furnishing both simplicity and strength. Heat treatment of all parts by precision methods gives extra strength and toughness.

The renewable lower jaw has cross tongues on its under side which fit into a cross slotted seat on the handle. This new construction eliminates all backward shear on its pin, locks it securely in place against loosening, and yet permits easy renewal. Black rustproof Parkerized finish with cadmium plated nut.

Made to new Federal Specifications GGG-W-651a for Type II, Heavy Duty Adjustable Pipe Wrenches.

Lgth. Open In.	Takes Pipe In.	Each	Lgth. Open In.	Takes Pipe In.	Each	Lgth. Open In.	Takes Pipe In.	Each
6	⅛ to ½	$1.90	14	¼ to 1½	$3.85	36	¼ to 4	$20.00
8	⅛ to ¾	2.20	18	¼ to 2	5.50	48	1 to 6	30.00
10	⅛ to 1	2.85	24	¼ to 2½	9.50	..	...	.....

Extra Parts

MOVABLE JAW

LOWER JAW

NUT

SPRING

PIN

RUBBER GRIP

Size In.	Movable Jaw Each	Renewable Lower Jaw & Pin Each	Nut Each	Spring Each	Size In.	Movable Jaw Each	Renewable Lower Jaw & Pin Each	Nut Each	Spring Each
6	$.65	...	$.15	$.25	18	$2.15	$.95	$.35	$.50
8	.70	...	.15	.30	24	3.50	1.10	.55	.60
10	1.10	$.65	.20	.35	36	5.70	1.50	1.10	.70
14	1.50	.85	.30	.40	48	9.00	2.00	2.00	.80

Pins only for lower jaw, 10 to 24-inch, 4 cents each; 36 and 48-inch, 5 cents each. Rubber grips for 8-inch, 30 cents; 10-inch, 40 cents; 14-inch, 50 cents.

Armstrong Bros. Chain Pipe Tongs

With Double Ended Reversible Jaws
With Flat Link Chain

Jaws are drop forged from special high carbon steel, carefully milled, heat treated, hardened and tested. Jaws may be quickly changed, end for end, if the teeth become burred or dull.

Handle is forged from spring steel selected to give the required stiffness. Chain is proof-tested.

No.	Each	For Pipe Size In.	Approx. Length Inches	Flat Link Chain Length Inches	Flat Link Chain Breaking Strain Pounds	Approx. Weight Pounds
30	$5.00	⅛ to ¾	13¾	9½	3600	1¾
31	7.00	⅛ to 1½	20	13½	6700	5¾
32	10.00	¼ to 2½	27	17½	9800	10
33	14.00	¾ to 4	37	22½	12500	16
33½	18.00	1 to 6	44½	32	14300	24
34	22.00	1½ to 8	50½	40½	15700	31
35	36.00	2 to 12	64½	55½	21800	50
*16	80.00	4 to 18	87	74½	40000	137

Extra Parts

No.	Chains Each	Jaws per Pair	Nuts and Studs Per Set	No.	Chains Each	Jaws per Pair	Nuts and Studs per Set
30	$1.50	$2.00	$.40	33½	$7.00	$9.50	$1.10
31	2.00	3.50	.50	34	9.00	11.00	1.40
32	3.00	5.50	.70	35	15.00	15.00	1.80
33	5.00	8.00	.90	*16	40.00	32.00	....

*Non-reversible jaws.

Armstrong Bros. Chain Pipe Tongs

Improved Design
With Flat Link Chain and Cable Chain

With Flat Link Chain

Jaws are drop forged from special steel, treated, hardened and tested. By means of increased bearing of jaw sockets upon the bar, combined with extra large hardened steel bolt, jaws are held solidly in place under most severe use.

Bolt is extra large and shackle or connecting link is drop forged from chrome-nickel steel. Handle is forged from high carbon steel.

Chain is best quality and each flat link chain is proof-tested to ⅔ of catalog strength. Flat link chain shipped unless otherwise specified.

No.	Each	Extra Parts Chain Each	Extra Parts Jaws per Pair	Extra Parts Bolts and Nuts per Set	For Pipe Size In.
10	$5.00	$1.50	$2.00	$.28	⅛ to ¾
11	7.00	2.00	3.50	.36	⅛ to 1½
12	10.00	3.00	5.50	.46	¼ to 2½
13	14.00	5.00	8.00	.60	¾ to 4
13½	18.00	7.00	9.50	.70	1 to 6
14	22.00	9.00	11.00	.90	1½ to 8
15	36.00	15.00	15.00	1.30	2 to 12
16	80.00	40.00	32.00	2.50	4 to 18

No.	Approx. Length Inches	Flat Link Chain Length Inches	Flat Link Chain Breaking Strain Pounds	Cable Chain Length Inches	Cable Chain Breaking Strain Pounds	Approx. Weight Pounds
10	14	9½	3600	9¾	1200	1¾
11	20	13½	6700	14½	4000	6
12	27	17½	9800	18	6000	10
13	37	22½	12500	27	10500	16½
13½	44	32	14300	33½	12500	23
14	51	40½	15700	42	15000	32
15	65	55½	21800	57	19000	53
16	87	74½	40000	76	40000	137

Walworth Parmelee Pipe Wrenches

No. 4

Grips with equal pressure all around the pipe, which prevents crushing.

No.	Lgth. In.	Takes Pipe In.	Complete Each	Without Girths Each	Extra Girths Size I.P.S. In.	Extra Girths Each	Slip Pins Each	Lock Bolts Each	Adjust. Nuts Each
1	10	⅜—1	$8.50	$2.75	⅜–½–¾–1	$1.75	$.20	$.40	$.20
2	20	1 —2	15.00	6.00	1–1¼	2.50	.25	.50	.40
					1½–2	3.00	.25	.50	.40
3	20	2 —3	17.00	7.00	2–2½–3	4.00	.25	.60	.70
4	37	3 —4	52.00	21.00	3 and 4	17.00	.70	.80	2.00

Warnock Improved Type Strap Wrenches

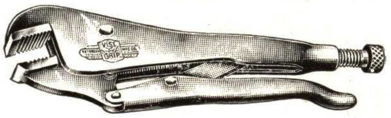
PATENTED FEB. 18, 1919
WARNOCK

For use on nickel plated or polished brass pipe and tubing. Has flexible woven strap, drop forged shackle and enameled unbreakable handle, quickly adjustable. Will not crush pipe or tubing.

			Heavy Duty	
Length.............inches	12	18	18	24
Each.....................	$2.50	$5.00	$10.00	$12.00
Extra Straps.........each	.50	1.00	2.50	3.00
Strap..............inches	12x1⅛	18x1¾	30x2¼	42x2¼
Takes Pipe.........inches	⅛ to 2	1 to 5	1 to 8	1 to 12

Extra Special Straps, 18x1⅛ In. for 12 In. Wrench..each **$.75**

Vise-Grip Wrenches



A tool which serves as an adjustable end wrench, locking wrench, pipe wrench, vise, clamp, plier, and toggle press.

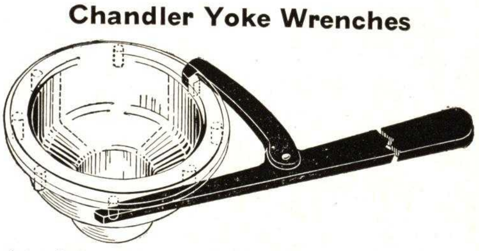
Has a double lever action that locks jaws to the work with a ton of pressure. Locks with a grip that holds until lever is snapped open.

Will hold anything whether round, square, etc. Adjustable to plier action. Works in close quarters at any angle.

Made of fine tool steel; Nickel-plated finish.

Length...........................inches	7	10
Each..................................	$1.65	1.95
Adjustable to....................inches	1⅛	1¼
Weight...........................ounces	11	19

Chandler Yoke Wrenches



A tool to tighten the nut on large cup sink strainers. Made of high grade malleable iron to withstand rough use. The entire wrench is finished in red enamel.

Made in one size only which fits Standard, Kohler, Briggs and other makes of strainers. Length, 12 inches.

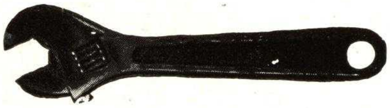
Individually wrapped; packed 12 wrenches in a paper carton.

Weight, one pound.

Each.. **$.60**

Crescent Adjustable Wrenches

Single End

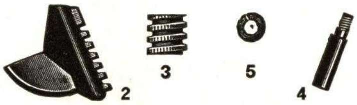


For use on automobiles, gas or gasoline engines, motor boats, machine shops, etc.

Made of a special analysis carbon tool steel, hardened and toughened by special heat-treating process.

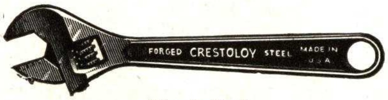
No.	Each	Length Inches	Capacity Inches	Weight Pounds
A14	$.80	4	1/2	1/8
A16	.80	6	3/4	5/16
A18	.95	8	15/16	5/8
A110	1.20	10	1 1/8	1 1/8
A112	1.80	12	1 5/16	2
A115	2.75	15	1 11/16	4 5/16
A118	4.00	18	2 1/16	7

Parts



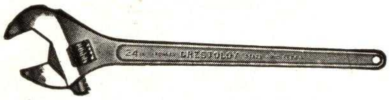
Lgth. In.	No. 2 Jaw No.	No. 2 Jaw Each	No. 3 Knurl No.	No. 3 Knurl Each	No. 4 Pin No.	No. 4 Pin Each	No. 5 Spring No.	No. 5 Spring Each
4	A14J	$.25	A14K	$.10	A14P	$.05	A14S	$.05
6	A16J	.25	A16K	.10	A16P	.05	A16S	.05
8	A18J	.30	A18K	.12	A18P	.05	A18S	.05
10	A110J	.40	A110K	.15	A110P	.05	A110S	.05
12	A112J	.60	A112K	.25	A112P	.10	A112S	.05
15	A115J	.85	A115K	.35	A115P	.10	A115S	.05
18	A118J	1.15	A118K	.55	A118P	.10	A118S	.05

Crestoloy Single End Wrenches


FORGED CRESTOLOY STEEL MADE IN U.S.A.

Single End

Sizes 4 to 12 Inches



Single End, Tapered Handle

Sizes 15 to 24 Inches

Made of special alloy steel; chromium plated. Special method of finishing handle prevents it from becoming slippery when used with wet or oily hands. Instantly adjustable to proper size; holds its adjustment until changed.

Packed 1 in a box.

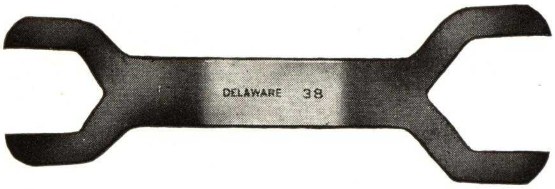
No.	Each	Size Inches	Cap. Inches	Thickness Head, In. Thickest Point	Thickness Head, In. Tip of Jaw	Ship. Wt. Oz.
AC14	$1.05	4	1/2	5/16	1/8	2
AC16	1.05	6	3/4	13/32	7/32	5
AC18	1.25	8	15/16	15/32	1/4	8
AC110	1.60	10	1 1/8	9/16	3/8	13
AC112	2.35	12	1 5/16	3/4	15/32	24
*AC115	3.50	15	1 11/16	15/32	19/32	54
*AC118	5.75	18	2 1/16	1 1/8	11/16	84
*AC124	9.45	24	2 7/16	1 13/32	7/8	144

Parts

Size In.	Jaws Each	Knurls Each	Pins Each	Springs Each	Size In.	Jaws Each	Knurls Each	Pins Each	Springs Each
4	$.35	$.13	$.05	$.05	12	$.75	$.26	$.10	$.05
6	.35	.13	.05	.05	15	1.15	.40	.10	.05
8	.40	.15	.05	.05	18	1.40	.45	.12	.05
10	.50	.20	.05	.05	24	2.10	.60	.15	.05

*Has tapered handle.

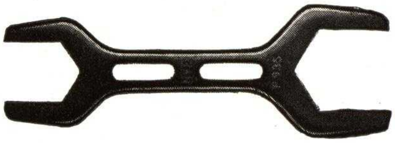
No. 38 Closet Spud Wrenches



Made of Delsteel alloy.

No.	38	38A
Each	$1.25	1.25
Size inches	1 1/4x2	1 1/2x2

Nye Closet Spud Wrenches



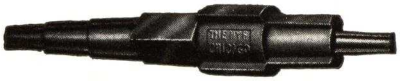
A light, handy tool for the plumber.

Sizes, 1 1/4x2 and 1 1/2x2 inches.

Shipping weight, 1 3/8 pounds.

Each .... $.70

Nye Union Valve-Nipple Wrenches



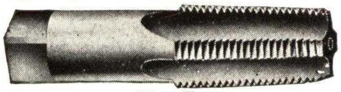
Made so that when inserted in a radiator union valve it catches the nipple at the base, thus avoiding mashing it. Takes sizes 3/8 to 2 inches inclusive.

Shipping weight, 3 pounds.

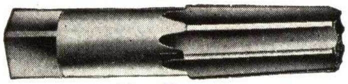
Each $1.40

Taper Pipe Taps and Reamers

High Speed Steel—Carbon Steel



Pipe Tap

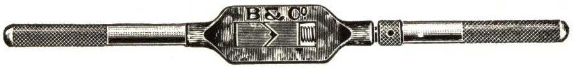


Pipe Reamer

Furnished with American Standard form of thread.

Diam. Inches	*High Speed* Each	Carbon Each	Diam. Inches	*High Speed* Each	Carbon Each
1/8	*$1.60*	$1.00	1	*$9.20*	$4.40
1/4	*1.80*	1.20	1 1/4	*13.10*	5.00
3/8	*2.30*	1.60	1 1/2	*17.70*	6.60
1/2	*4.40*	2.00	2	*24.00*	10.00
3/4	*6.10*	2.80	...	......	.....

No. 3800 Butterfield Derby Tap and Reamer Wrenches



No.	Length Inches	For Hand Taps Inches	For Pipe Taps Inches	Price Each
9	10	3/16 to 1/2	....	$3.50
10	15	1/4 to 3/4	1/8, 1/4, 3/8	4.00
11	20	3/8 to 1	1/4, 3/8, 1/2	5.00
12	25	1/2 to 1 1/4	3/8, 1/2, 3/4	8.00
14	30	5/8 to 1 1/2	3/4, 1, 1 1/4	12.00

Straight Shank Twist Drills

Carbon Steel

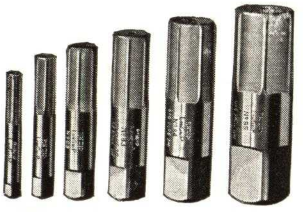
Diam. Inches	Length Overall Inches	Each	Diam. Inches	Length Overall Inches	Each
1/8	5 1/8	$.45	11/32	6 1/2	$.75
5/32	5 3/8	.45	3/8	6 3/4	.80
3/16	5 3/4	.50	13/32	7	.90
7/32	6	.55	7/16	7 1/4	1.00
1/4	6 1/8	.60	15/32	7 1/2	1.10
9/32	6 1/4	.65	1/2	7 3/4	1.20
5/16	6 3/8	.70	....	...	....

Bit Stock Drills

Carbon Steel—For Metal or Wood

Diam. Inches	Per Dozen	Length Overall Inches	Diam. Inches	Per Dozen	Length Overall Inches
1/16	$2.50	3 3/8	1/2	$13.00	6 3/4
3/32	2.70	3 5/8	17/32	14.25	7 1/2
1/8	3.00	3 7/8	9/16	15.50	7 1/2
5/32	3.50	4 1/8	19/32	16.75	7 1/2
3/16	4.00	4 3/8	5/8	18.00	7 1/2
7/32	4.50	4 5/8	21/32	19.50	7 1/2
1/4	5.00	5 1/8	11/16	21.00	7 1/2
9/32	6.00	5 1/4	23/32	24.00	7 1/2
5/16	7.00	5 1/2	3/4	24.00	7 1/2
11/32	8.00	5 3/4	13/16	27.00	7 1/2
3/8	8.50	5 7/8	7/8	30.00	7 1/2
13/32	9.25	6	15/16	33.00	7 1/2
7/16	10.50	6 1/4	1	36.00	7 1/2
15/32	11.75	6 5/8	.....	.....	...

Ridgid LonGrip Straight Fluted Pipe Extractors



Made with vertical flutes that stand out slightly from tool. Easily driven into pipe end, flutes grooving way firmly down entire length inserted. Will not turn into or out of broken end. No damaging of threads, wedging, bottoming, slipping, reaming, or spreading of pipe. Separate extractor for each size pipe. Sets in canvas bags.

Ridgid LonGrip Pipe Extractors

No.	Each	Pipe Size, In.	Flute Diam. O.D., In.	Overall Lgth., In.	Use Drill	No.	Each	Pipe Size, In.	Flute Diam. O.D., In.	Overall Lgth., In.	Use Drill
80	$1.23	1/8	.287	2 1/4	1/4	84	$2.57	3/4	.860	3 1/4	13/16
81	1.35	1/4	.389	2 1/2	3/8	85	3.74	1	1.069	3 1/2	1 1/16
82	1.81	3/8	.538	2 3/4	1/2	86	5.21	1 1/4	1.423	3 3/4	1 3/8
83	2.16	1/2	.665	3	5/8	87	7.14	1 1/2	1.676	4	1 9/16

Sets of Ridgid LonGrip Pipe Extractors

Sets contain assortments as shown in following table.

No.	Each	Pipe Size, In.	Part Nos.
880	$6.55	1/8–1/2	80 to 83 Incl
881	7.72	1/4–3/4	81 to 84 Incl.
882	11.12	1/4–1	81 to 85 Incl.
883	12.23	1/8–1	80 to 85 Incl.

No. 1 Nye Improved Solid Malleable Stocks

Equipped with built-in adjustable guide, for all sizes of pipe, 1/8 to 1 inch, and 1-inch couplings, also bolt dies 1/4 to 1 1/8 inches.

With Skip-Tooth Dies

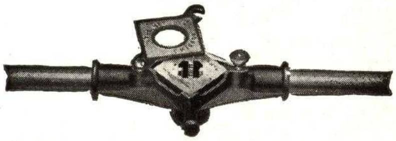
Description	Each	Ship. Wt., Lb.
Stock and Dies, 1/8, 1/4, 3/8, 1/2, 3/4, 1 Inch.....	$16.79	12 1/4
Stock and Dies, 1/4, 3/8, 1/2, 3/4, 1 Inch.........	14.57	11 1/4
Stock and Dies, 3/8, 1/2, 3/4, 1 Inch............	12.29	10 1/4
Stock and 3 Dies, 3/8, 1/2, 3/4 or 1/2, 3/4, 1 Inch.	10.06	9 3/4
Stock and Dies, 1/2, 3/4 Inch..................	9.59	8 1/4
Extra Stock with Handles..................	5.62	7
Extra Skip-Tooth Dies....................	2.46	1

With No. 1 Solid Bolt Dies (NC)

Description	Each	Ship. Wt., Lb.
Stock and 8 Dies..........................	$20.59	15
Stock and 7 Dies..........................	18.72	14
Stock and 6 Dies..........................	16.85	13
Stock and 5 Dies..........................	14.98	12
Extra Stock with Handles..................	5.62	7
Extra Bolt Dies...........................	1.87	1

No. 1 Nye Solid Die Stocks

Fitted with Nye Genuine Skip Tooth Dies



This stock is standard and takes the No. 1 (2 1/2x2 1/2x3/4) die of any make.

Handles are white plated. Guides are machined inside and out and have the pipe size marked on them.

Dies are made of tool steel, hardened and tempered in oil, in Briggs (American) and Whitworth (English) standards, right and left hand. American standard right-hand dies furnished unless otherwise specified.

A set consists of stock complete with dies and guides as listed below. (Left hand dies 50% higher than right hand).

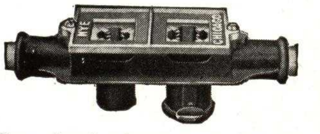
Description	Each	Ship Wt., Lb.
Stock and Dies 1/2, 3/4 Inch................	$8.72	9 1/4
Stock and Dies 1/2, 3/4, 1 Inch.............	10.06	10
Stock and Dies 3/8, 1/2, 3/4, 1 Inch..........	12.29	11 1/4
Stock and Dies 1/4, 3/8, 1/2, 3/4, 1 Inch.......	14.57	12 1/4
Stock and Dies 1/8, 1/4, 3/8, 1/2, 3/4, 1 Inch....	16.79	13 1/2

Parts

Description	Each	Ship. Wt., Lb.
Extra Stocks with Handles and Screw......	$3.51	7 1/4
Extra Skip-Tooth Dies...................	2.46	1
Extra Guides (not needed for 1 inch)......	.35	1/4

Nye 2-Way Solid Die Stocks

With Genuine Skip-Tooth Dies



Made of malleable iron. Handy when only two sizes of pipe or conduit are being threaded. Equipped with 3/4 and 1-inch dies unless otherwise specified. Can also be furnished with 1/2 and 3/4-inch dies.

Description	Each	Wt., Lb. Complete
Stock and Dies, 3/4, 1-Inch, with Extra 1/2-Inch Guide..........................	$6.79	10 1/4
Stock and Dies, 1/2, 3/4-Inch, with Extra 1/2-Inch Guide..........................	6.79	10 1/4
Stock Complete with Handles but without Dies	3.51	8 3/4
Extra Skip-Tooth Dies.....................	2.46	1
Extra Guides (Not Needed for 1-Inch).......	.35	1/4

Nye Improved Solid Pipe Dies

Skip Tooth with Threaded Throat

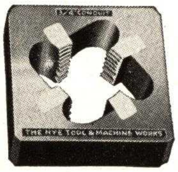
THE NYE TOOL & MACHINE WORKS

The Nye feature of removing every alternate tooth in the back of the die to reduce friction, and of relieving or backing off each segment, is used in the Nye Solid Die. Hardened and tempered in oil. Made in both Briggs and Whitworth Standard. Right-hand and the Briggs Standard dies furnished unless otherwise specified.

No.	Each	Dimensions, In.	Size Dies, Inches	Approx. Ship. Wt., Lb.
Jr.	$2.28	2 x2 x ¾	⅛, ¼, ⅜, ½, ¾	¾
0	2.28	2 x2 x ½	⅛, ¼, ⅜, ½	¾
1	2.46	2½x2½x ¾	⅛, ¼, ⅜, ½, ¾, 1	1
1½	3.28	3 x3 x ¾	⅛, ¼, ⅜, ½, ¾, 1, 1¼, 1½.	1½
2	4.10	4 x4 x ⅞	½, ¾, 1, 1¼, 1½, 2	2½
4	12.29	5 x5 x1¼	2½, 3	3½

Add 50 per cent for left-hand dies.

Nye Conduit Solid Dyes



Square

Round

Skip-tooth dies made especially for threading conduit pipe.

Produces the proper thread adopted and standardized by the Conduit Manufacturers Association.

Square Dies

Die block, 2½x2½ inches.

½, ¾ and 1-Inch Size....................each $2.46

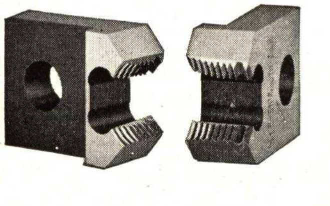
Round Dies

For Triad stocks.

½ and ¾-Inch Size ....each $2.28
1 and 1¼-Inch Size....................each 2.46

Nye Adjustable Pipe Dies

Skip Tooth Pattern with Threaded Throat

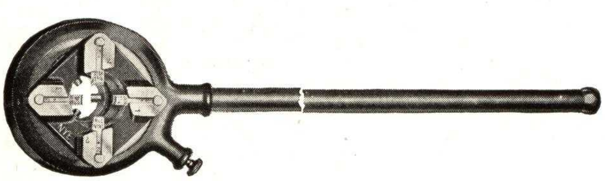


Made of tool steel, hardened and tempered in oil.

Made in both Briggs (American) and Whitworth (English) standard right and left hand. American standard right hand dies furnished unless otherwise specified. Add 50 per cent for left hand.

No.	Size, Inches	Ship. Wt., Lb.	Per Set
1	⅛, ¼, ⅜, ½	¼	$1.93
2	⅛, ¼, ⅜, ½, ¾, 1	¾	2.28
2½	½, ¾, 1, 1¼	1¼	2.57
2½	½x¾, D.E.	1¼	3.86
2½	1x1¼, D.E.	1¼	3.86
3	½, ¾, 1, 1¼, 1½, 2	2¼	3.22
6	2½ to 3, D.E.	6	16.09

No. 1R Nye Rachet Receding Die Stocks



A light, one-man stock.

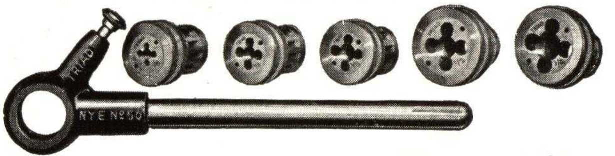
Furnished with bushings and 1, 1¼, 1½ and 2-inch dies.

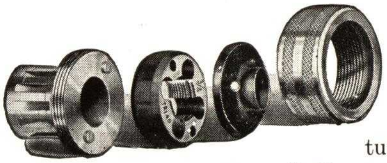
Shipping weight, 23 pounds.

No. 1R, Complete....................each $14.04
1, 1¼, 1½-Inch Chasers, 4 Segments to a Set of Each Size....................per set .99
2-Inch Chasers, 4 Segments to a Set....................per set 1.58

Nye Triad Ratchet Die Stocks

No. 50 Capacity, ⅛ to ¾-Inch Pipe
No. 60 Capacity, ⅛ to 1¼-Inch Pipe
With Reversible Die Feature





Dies prevented from turning by two stationary pins in die head; securely locked in by threaded cap, easily removed by few right-hand turns. No small screws.

Description	No. 50 Size Inches	No. 50 Each	No. 50 Approx. Wt. Lb.	No. 60 Size Inches	No. 60 Each	No. 60 Approx. Wt. Lb.
Stock With Dies and 3 Ceiling Bushings...	*⅛ to ¾	$16.20	9½	†⅛ to 1¼	$25.45	21½
	*¼ to ¾	13.40	8¼	†¼ to 1¼	22.23	19¾
	*⅜ to ¾	10.59	7¼	†⅜ to 1¼	19.01	17¾
	....	.....	...	†½ to 1¼	15.80	15¾
	....	.....	...	†⅜ to 1	15.80	14¼
	....	.....	...	†½ to 1	12.58	12½
Stock with Dies (without Ceiling Bushings)..........	½, ¾	7.78	6	1–1¼	9.36	10½
	....	.....	...	¾–1	9.36	10½
	....	.....	...	½–¾	9.36	10½
Ratchet with Handle...	....	2.34	2¾	....	2.93	4¼
Die Head Complete....	⅛ to ¾	2.81	1¼	⅛ to 1¼	3.22	2½
Dies Only............	⅛, ¾, ⅜	1.93	¼	⅛, ¼, ⅜	1.93	¼
Dies Only, Each (Pipe or Conduit)....	½, ¾	2.28	½	½, ¾	2.28	½
	....	.....	...	1, 1¼	2.46	½
Extra Ceiling Bushings...........	⅛ to ¾	.18	¼	⅛ to 1	.18	¼
	....	.....	...	1¼	.29	¼
Handy Carrying Rack..	....	.59	2	....	1.05	4
Pawl and Spring......	....	.70	¼	....	.70	¼

*⅜, ½, ¾-Ceiling Bushings †½, ¾, 1-Ceiling Bushings.

No. 55 Nye Triad Ratchet Die Stocks

Capacity, ⅛ to 1-Inch Pipe
With Reversible Die Feature

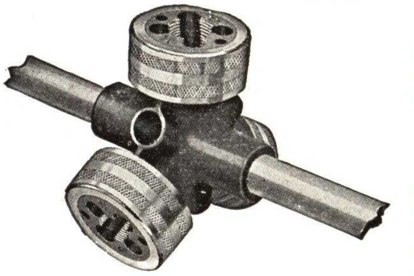
NYE No 55 TRIAD
NYE TOOL & MACHINE CO.
CHICAGO

Equipped with solid round skip-tooth dies. Dies are prevented from turning by two stationary pins in die head and are securely locked in by a threaded cap, easily removed by a few right-hand turns. Dies can be quickly reversed for threading short nipples or a stub of pipe close to wall or ceiling.

Dies Inches	Description	Ceiling Guides Inches	Each
⅛ to 1	Stock with Dies and Heads......	½,¾,1	$19.31
¼ to 1	Stock with Dies and Heads......	½,¾,1	16.50
⅜ to 1	Stock with Dies and Heads......	½,¾,1	13.69
½ to 1	Stock with Dies and Heads	½,¾,1	10.88
¾,1	Stock with Dies................	....	8.07
⅛ to ¾	Stock with Dies and Heads......	⅜,½,¾	16.38
¼ to ¾	Stock with Dies and Heads......	⅜,½,¾	13.57
⅜ to ¾	Stock with Dies and Heads......	⅜,½,¾	10.76
½, ¾	Stock with Dies................	....	7.96
....	Ratchet with Handle............	....	3.39
⅛,¼,⅜	Die Head with Dies.............	....	2.81
½,¾	Die Head with Dies.............	....	2.81
1	Die Head with Dies.............	....	3.40
⅛,¼,⅜	Dies Only......................	....	1.93
½,¾	Dies Only (Pipe or Conduit)....	....	2.28
1	Dies only (Pipe or Conduit).....	....	2.46
....	Extra Ceiling Bushings..........	⅛ to 1	.18
....	Pawl, Spring, and Pin...........	....	.59

Nye Triad 3-Way Stocks

With Reversible Die



Furnished with hardened steel bushings built permanently in the casting.

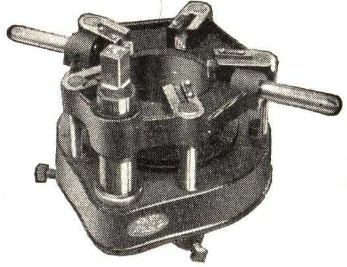
Dies may be reversed in die holder to thread close nipples, special bushings being provided with each complete stock, for this purpose.

Stock Complete with ⅜, ½, and ¾-Inch Dies. Weight, 7½ Pounds....................each	$8.78
Stock Complete with ½, ¾, and 1-Inch Dies. Weight, 11¼ Pounds....................each	9.36
Triad Dies Only, ⅜ Inch. Weight, ¼ Lb.......each	1.93
Triad Dies Only, ½ and ¾ Inch. Weight, ½ Pound, (Pipe or Conduit)....................each	2.28
Triad Dies Only, 1 Inch. Weight, ½ Pound, (Pipe or Conduit)....................each	2.46
Ceiling Bushings, ⅜, ½, ¾ and 1 Inch, Weight, ¼ Pound....................each	.18

No. 2 Nye Receding Stocks

With Separate Guides

Capacity, 2½ to 4-Inch Pipe Inclusive



Fits Federal Specification GGG-T-581, Fig. 12, Type I.

No. **2**, Complete with Ratchet Handle and Spider Hub, Guides and Dies, 2½, 3, 3½, and 4 Inches. Weight 100 Pounds....................each	$64.35
No. **2**, Stock Only without Ratchet Handle, Hub, Guides and Dies. Weight, 67½ Pounds......each	40.95
Bushings (Guides) 2½, 3, 3½ and 4 Inches. Weight, 2¾ Pounds....................each size	1.17
Set-Screw, Weight, ¼ Pound....................each	.13

Nye Thread Chasers

NYE
CHICAGO, U.S.A.
NYE
CHICAGO, U.S.A.
NYE
CHICAGO, U.S.A.
NYE
CHICAGO, U.S.A.

For Receding Die Stocks

Made from either high grade alloy or high speed steel, hardened and tempered in oil.

Cutting teeth milled, not tapped.

Set consists of one size only.

Sets for Nos. 1, 1-A, 1-R, 101 and 101-A Stocks

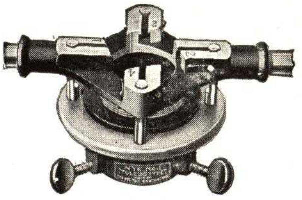
Consists of regular alloy steel segments, 4 of each of the following sizes: 1, 1¼ and 1½ inches. Approximate shipping weight, 1 pound............per set	$.99
Consists of high speed steel segments, 4 of the 2-inch size. Approximate shipping weight, ¾ pound.per set	1.58
Consists of high speed steel segments, 4 of each of the following sizes: 1, 1¼ and 1½ inches. Approximate shipping weight, 1 pound.............per set	1.76

Sets for No. 2 Stocks

Consists of regular alloy steel segments, 5 of each of the following sizes: 2½, 3, 3½ and 4 inches. Approximate shipping weight, 2 pounds...........per set	$4.68

Nye Receding Die Stocks

Capacity, 1 to 2-Inch Pipe



No. 1

Constructed on the receding die principle, therefore threads pipe very easily.

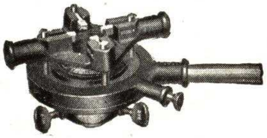
Set consists of stock handles, guides and set of 1 to 2-inch dies. Stock of malleable iron; dies of finest grade tool steel.

Furnished in Briggs (American) and Whitworth (English) standards, right hand. American Standard furnished unless otherwise specified.

No. 1

No. **1**, Stock Complete with Bushings, Handles and 1, 1¼, 1½, and 2-Inch Dies, Approximate Shipping Weight, 21 Pounds....................each	$12.87
No. **1**, Stock Only, With Bushings, Without Dies and Handles, Approximate Shipping Weight, 14¾ Pounds....................each	9.36

No. 1A



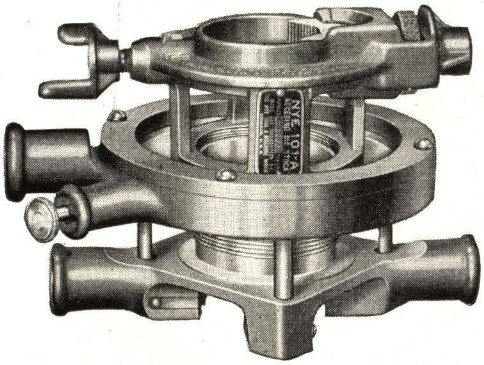
Same basic construction as No. 1, but equipped with a ratchet. Can be used as an ordinary stock with two handles when desired.

Ratchet feature makes tool desirable for threading pipe where space is limited.

No. **1-A**, Ratchet Stock Complete with Bushings, Handles and 1, 1¼, 1½ and 2-Inch Dies, Approximate Shipping Weight, 25¾ Pounds........each	$15.21
No. **1-A**, Ratchet Stock Only, With Bushings, Without Dies and Handles, Approximate Shipping Weight, 18¾ Pounds....................each	11.70
Bushings (Guides), Sizes, 1, 1¼, 1½ or 2 Inches, Approx. Shipping weight, ¾ Pound.........each	.33
Thumb Screws, Approx. Ship. Weight, ⅛ Pound each	.13
Nail, Spring and Pin, Approximate Shipping Weight Per Set, ¼ Pound....................per set	.13

Nye Receding Die Stocks

Capacity, 1 to 2-Inch Pipe



No. 101A, Side View

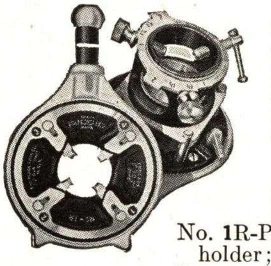
Combines a die holder with a pipe holder. An adaptation of the vise principle for holding pipe. Provides quick, positive setting for different pipe sizes. Accommodates 2-inch coupling.

Vise jaws are easily set for size of pipe to be threaded by turning large knurled nut. A click which can be heard or felt indicates when jaws are in proper position. Jaws can also be set for crooked threads. Clamping screw is then run down firmly on pipe.

No. **101**, Plain, Complete with Vise Type Pipe Holder and Dies, Size, 1, 1¼, 1½ and 2 inches. Approximate Shipping Weight, 26 Pounds.......each	$15.80
No. **101A**, Ratchet, Complete with Vise Type Pipe Holder and Dies, Size, 1, 1¼, 1½ and 2 inches. Approximate Shipping Weight, 26¾ Pounds....each	17.55

No. 1R Ridgid Poster Threaders

Capacity, 1 to 2-Inch Pipe



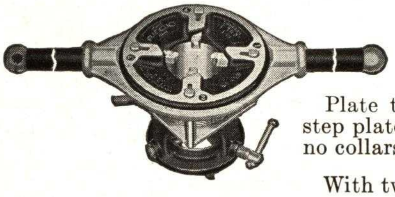
Full-floating posts, separately replaceable. Alloy construction throughout. Closed chaser slots prevent spreading of die head. All dies of same number interchangeable with similar number of any Ridgid poster set.

Plate type workholder has step plate; cam type requires no collars or bushings.

No. 1R-P, With Plate Type Workholder; Weight, 20 Pounds	each	$14.04
No. 1R-C, With Cam Type Workholder; Weight, 20¼ Pounds	each	16.38
1, 1¼, 1½-Inch Alloy Steel Chaser Dies	set of 4	1.00
1, 1¼, 1½-In. High Speed Steel Chaser Dies	set of 4	1.76
2-Inch High Speed Steel Chaser Dies	set of 4	1.58

No. 1DR Ridgid Poster Threaders

Capacity, 1 to 2-Inch Pipe



Full floating posts. Alloy construction.

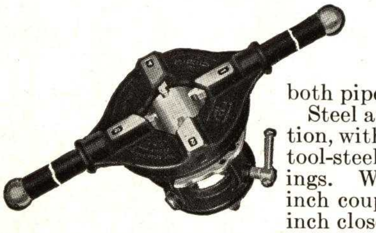
Plate type workholder has step plate; cam type requires no collars or bushings.

With two handles.

No. 1DR-P, With Plate Type Workholder; Weight, 20¼ Pounds	each	$15.21
No. 1DR-C, With Cam Type Workholder; Weight, 20½ Pounds	each	17.55
1, 1¼, 1½-Inch Alloy Steel Chaser Dies	set of 4	1.00
1, 1¼, 1½-In. High Speed Steel Chaser Dies	set of 4	1.76
2-Inch High Speed Steel Chaser Dies	set of 4	1.58

No. 65 Ridgid Pipe Threaders

Capacity, 1 to 2-Inch Pipe
Plain 2-Handle Die—Non Ratchet



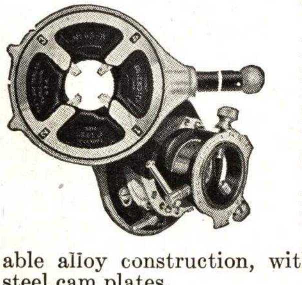
Threads four sizes of pipe with one set of high speed tool-steel chaser dies. Threads both pipe and conduit.

Steel and malleable construction, with drop-forged hardened tool-steel cam plates. No bushings. Workholders take two inch couplings for threading 2-inch close nipples.

No. **65**P, with Plate Type Workholder; Weight 20⅓ Pounds	each	$16.38
No. **65**C, with Cam Type Workholder; Weight, 22½ Pounds	each	17.26
Extra Chaser Dies, High Speed Steel	per set	3.22

Ridgid Pipe Threaders

Capacity, 1 to 2-Inch Pipe



Threads four sizes of pipe 1 to 2 inches with one set of dies that stay in the threader. Furnished with either cam or plate type workholder, practically automatic; set to pipe size, tighten one screw; no bushings. Workholder takes 2-inch couplings for threading 2-inch close nipples.

Rugged all steel and malleable alloy construction, with drop-forged hardened tool steel cam plates.

No. **65**-RC, Ratchet with Cam Type Workholder, Weight, 23 Pounds	each	$19.89
No. **65**-R-P, Ratchet with Plate Type Workholder, Weight 22½ Pounds	each	17.55
Extra Chaser Dies, 4 in a Set, Wt., 8 Oz.	per set	3.22

Ridgid 3-Way Die Pipe Stocks

For conduit and small pipe. Convenient compact threaders, with same handy reversal of chasers for close-to-wall threads, same alloy chasers easily removed for regrinding.

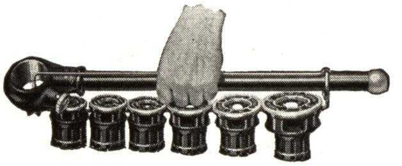
No.		**30**A	**31**A
Each		**$8.78**	**9.36**
Capacity	inches	⅜–¾	½-1
Weight, Packed 1 to a box	pounds	7⅛	11

Four Segment Chaser Dies

Size	inches	⅜	½	¾	1
For No. **30**A	per set	**$1.64**	**$1.76**	**$1.76**	....
For No. **31**A	per set	....	**1.50**	**1.50**	**$1.99**

Ridgid Ratchet Pipe Threaders

With Exposed Ratchet



Steel and malleable dies for small pipe.

No. 00-R threads ⅛, ¼, ⅜, ½, ¾, and 1-inch pipe.
No. 111R threads ⅛, ¼, ⅜, ½, ¾, 1, and 1¼-inch pipe.

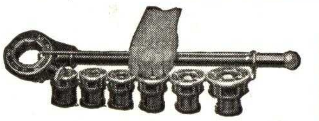
Electrical conduit dies available at regular right-hand die prices.

No. 00-R			No. 111-R		
Capacity, In.	Each	Wt., Lb.	Capacity, In.	Each	Wt., Lb.
⅛ to 1	**$19.31**	13¼	**⅛ to 1¼**	**$24.22**	21¼
⅛ to ¾	**16.38**	11¼	**⅛ to 1**	**21.18**	17¾
¼ to 1	**16.50**	12¼	**¼ to 1¼**	**21.18**	19¼
¼ to ¾	**13.59**	10	**¼ to 1**	**18.14**	16¼
⅜ to 1	**13.69**	11	**⅜ to 1¼**	**18.14**	17½
⅜ to ¾	**10.76**	8¾	**⅜ to 1**	**15.09**	14½
½ to 1	**10.88**	9¾	**½ to 1¼**	**15.09**	15¾
½ to ¾	**7.96**	7½	**½ to 1**	**12.05**	12½

⅛, ¼, and ⅜-Inch Chasers	per set	**$1.64**
½ and ¾-Inch Chasers	per set	**1.76**
1-Inch Chasers	per set	**1.99**
1¼-Inch Chasers, For No. 111-R Only	per set	**1.99**

Ridgid Ratchet Pipe Threaders

With Inclosed Ratchet



Rugged steel and malleable dies for small pipe. Die heads push out easily with thumbs for changing, snap in from either side cannot fall out.

No. 0-R threads ⅛, ¼, ⅜, ½, ¾, and 1-inch pipe.
No. 11-R threads ⅛, ¼, ⅜, ½, ¾, 1, and 1¼-inch pipe.

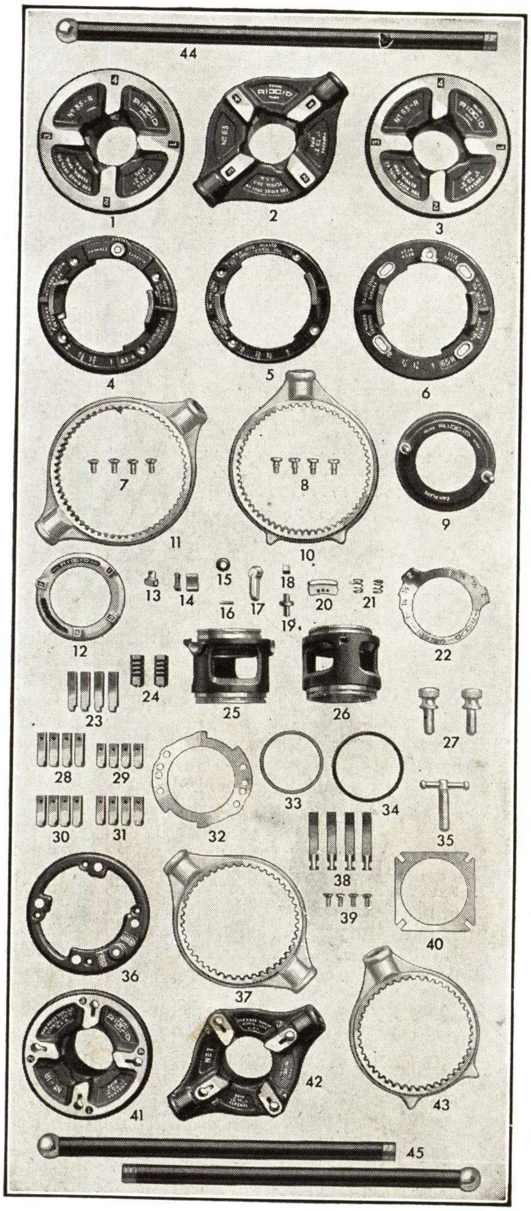
Furnished with convenient carrier.

Electrical conduit dies available at regular right-hand die prices.

No. 0-R			No. 11-R		
Capacity, In.	Each	Wt., Lb.	Capacity, In.	Each	Wt., Lb.
⅛ to 1	**$20.91**	13⅛	**⅛ to 1¼**	**$25.67**	19½
⅛ to ¾	**17.92**	11	**⅛ to 1**	**22.48**	16¾
¼ to 1	**18.10**	12¼	**¼ to 1¼**	**22.72**	18¼
¼ to ¾	**15.12**	10⅛	**¼ to 1**	**19.53**	15¾
⅜ to 1	**15.29**	11⅛	**⅜ to 1¼**	**19.77**	16¾
⅜ to ¾	**12.31**	9	**⅜ to 1**	**16.58**	14¼
½ to 1	**12.48**	10	**½ to 1¼**	**16.82**	15½
½ to ¾	**9.50**	8	**½ to 1**	**13.63**	12¾

⅛, ¼, and ⅜-Inch Chasers	per set	**$1.64**
½ and ¾-Inch Chasers	per set	**1.76**
1-Inch Chasers	per set	**1.99**
1¼-Inch Chasers, For No. 11-R Only	per set	**1.99**

Parts for Ridgid Pipe Threaders

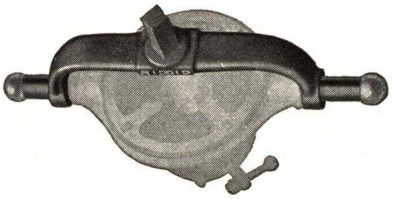


Parts for No. 65R and 1R poster die stocks are illustrated above.

When ordering parts specify part number, die number and size.

No.	Description		Threader No.									
			65P	65C	65RP	65RC	85RP	85RC	1P	1C	1RP	1RC
1	Head	each	....	....	....	....	$5.85	$5.85	....	....	....	....
2	Head	each	$6.14	$6.14	....	....	....	....	....	....	....	....
3	Head	each	....	....	$5.85	$5.85	....	....	....	....	....	....
4	Drive Plate	each	....	....	....	....	2.34	2.34	....	....	....	....
5	Drive Plate	each	2.05	2.05	....	....	....	....	....	....	....	....
6	Drive Plate	each	....	....	2.34	2.34	....	....	....	....	....	....
7	Drive Plate Screw	each	.06	.06	....	....	.06	.06	....	....	....	...
8	Drive Plate Shoulder Screw	each	....	....	.12	.12	....	....	....	....	....	...
9	Cam Plate	each	1.99	1.99	1.99	1.99	1.99	1.99	....	....	....	...
10	Single Ratchet Ring	each	....	....	2.05	2.05	....	....	....	....	....	...
11	Double Ratchet Ring	each	....	....	2.34	2.34	2.34	2.34	....	....	....	...
12	Gage Ring	each	....	1.87	....	1.87	....	1.87	....	$1.87	....	$1.87
13	Release Cam	each	....	....	....	....	.29	....	$.29	...	$.29	.29
14	Ratchet Pawl	each	....	....	.12	.12	.12	.12	....	....	.12	.12
15	Release Cam Flat Spring	each	.06	.06	.06	.06	.06	.06	....	....	.06	.06
16	Cam Lever Pin	each	.06	.06	.06	.06	.06	.06	....	....	.06	.06
17	Release or Ratchet Cam Lever	each	.29	.29	.29	.29	.29	.29	....	....	.29	.29
18	Release Cam Shoe	each	.12	.12	.12	.12	....	....	....	....	....	....
19	Release Cam	each	.29	.29	.29	.29	....	....	....	....	....	....
20	Slide for Cam	each	....	....	....	....	.12	.12	....	....	.12	.12
21	Pawl Spring	each	....	....	.06	.06	.06	.06	....	....	.06	.06
22	Gage Plate	each	1.17	....	1.17	....	1.17	....	1.17	....	1.17	...
23	No. 65 Series Steel or Brass Chasers	set of 4	3.22	3.22	3.22	3.22	3.22	3.22	....	....	....	....
24	Workholder Jaws	each	....	.47	....	.47	....	.47	....	.47	....	.47
25	Workholder for Cam Type Die	each	....	3.80	....	3.80	....	3.80	....	3.80	....	3.80
26	Workholder for Plate Type Die	each	3.51	....	3.51	....	3.51	....	3.51	....	3.51	...
27	Workholder Gage Screws	each	.41	....	.41	....	.41	....	.41	....	.41	....
28	1″ Alloy Steel Chasers	set of 4	....	....	....	....	....	....	1.00	1.00	1.00	1.00
30	1¼″ Alloy Steel Chasers	set of 4	....	....	....	....	....	....	1.00	1.00	1.00	1.00
31	1½″ Alloy Steel Chasers	set of 4	....	....	....	....	....	....	1.00	1.00	1.00	1.00
29	2″ Alloy Steel Chasers	set of 4	....	....	....	....	....	....	1.58	1.58	1.58	1.58
32	Change Plate	each	.88	.88	.88	.88	.88	.88	....	....	....	....
33	Gage Ring or Gage Plate Spring Ring	each	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12
34	Change Plate or Post Plate Spring Ring	each	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12
35	Workholder Clamp Screw Assembled	each	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
36	Back Plate	each	....	....	....	....	....	....	....	....	1.17	1.17
37	Double Ratchet Ring	each	....	....	....	....	....	....	....	....	2.34	2.34
38	Taper Posts	each	....	....	....	....	....	....	.35	.35	.35	.35
39	Back Plate Screws	each	....	....	....	....	....	....	....	....	.06	.06
40	Plate for Taper Posts	each	....	....	....	....	....	....	.70	.70	.70	.70
42	Head	each	....	....	....	....	....	....	6.14	6.14	5.85	5.85
43	Single Ratchet Ring	each	....	....	....	....	....	....	....	....	2.05	2.05
44	24″ Handle	each	....	....	.88	.88	.88	.88	....	....	....	....
45	19″ Handle	each	.88	.88	....	....	....	....	.88	.88	....	....
..	Assembled Drive Plate	each	2.93	2.93	3.16	3.16	2.93	2.93	....	....	....	....
..	Assembled Back Plate.	each	....	....	....	....	....	....	....	....	1.64	1.64
..	Assembled Cam Type Workholder	each	....	7.61	....	7.61	....	7.61	....	7.61	....	7.61
..	Assembled Plate Type Workholder	each	7.02	....	7.02	....	7.02	....	7.02	....	7.02	....

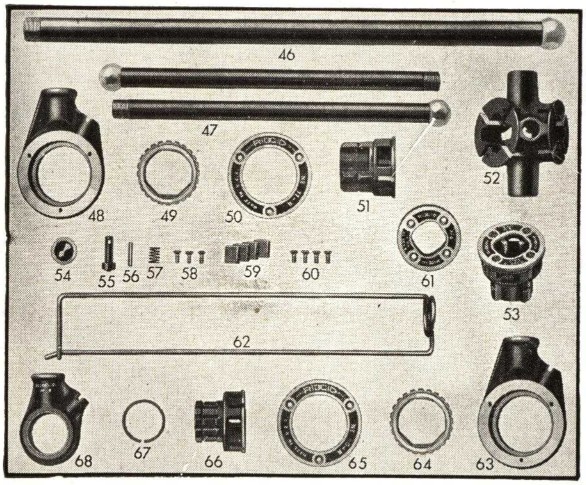
Ridgid Driving Yoke



Fits and two-handle 1 to 2-inch die stock used in connection with power drive.

Each.. $2.93

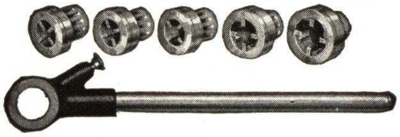
Parts for Ridgid Pipe Threaders



Description	Threader No.					
	00-R	111-R	0-R	11-R	30-A	31-A
No. **46** Ratchet Handle..........each	$.61	$.74	$.61	$.74	....	....
No. **47** Handle..........each	....	....	....	....	$.59	$.64
No. **48** Drive Ring Housing......each	....	....	....	1.84	....	....
No. **49** Ratchet Ring..........each	....	....	....	1.23	....	....
No. **50** Drive Ring Cover........each	....	....	....	.42	....	....
No. **51** Die Head..............each	....	....	1.76	2.14	....	....
No. **52** Body.............. ...each	....	....	....	....	3.22	3.69
No. **53** ⅛″ Die Head ....complete	2.81	2.93	2.81	2.98	....	....
No. **53** ¼″ Die Head ....complete	2.81	2.93	2.81	2.98	....	....
No. **53** ⅜″ Die Head ....complete	2.81	2.93	2.81	2.98	....	....
No. **53** ½″ Die Head ....complete	2.81	2.93	2.87	3.10	....	....
No. **53** ¾″ Die Head ....complete	2.81	2.93	2.87	3.10	....	....
No. **53** 1″ Die Head........complete	2.93	2.93	2.98	3.22	....	....
No. **53** 1¼″ Die Head.......complete	....	2.93	....	3.22	....	....
No. **54** Ratchet Knob...........each	.19	.19	.19	.19	....	....
No. **55** Ratchet Pawl...........each	.36	.36	.36	.36	....	....
No. **56** Pin....................each	.06	.06	.06	.06	....	....
No. **57** Ratchet Spring.........each	.12	.12	.12	.12	....	....
No. **58** Screw for Drive Ring.....each	....	....	.06	.06	....	....
No. **59** ⅛″ Chasers ....per set	1.64	1.64	1.64	1.64	....	....
No. **59** ¼″ Chasers ....per set	1.64	1.64	1.64	1.64	....	....
No. **59** ⅜″ Chasers ....per set	1.64	1.64	1.64	1.64	1.64	....
No. **59** ½″ Chasers...........per set	1.76	1.76	1.76	1.76	1.76	1.76
No. **59** ¾″ Chasers ....per set	1.76	1.76	1.76	1.76	1.76	1.76
No. **59** 1″ Chasers...........per set	1.99	1.99	1.99	1.99	....	1.99
No. **59** 1¼″ Chasers..........per set	....	1.99	....	1.99	....	....
No. **60** Die Head Cover Screw....each	.06	.06	.06	.06	.06	.06
No. **61** Die Head Cover..........each	.59	.59	.59	.59	.59	.59
No. **62** Die Carrier.............each	.70	.70	.70	.70	....	....
No. **63** Drive Ring Housing......each	....	....	1.63	....	....	....
No. **64** Ratchet Ring...........each	....	....	.94	....	....	....
No. **65** Drive Ring Cover........each	....	....	.30	....	....	....
No. **66** Die Head Only..........each	1.53	1.76	....	....	....	....
No. **67** Die Head Spring ....each	.12	.12	....	....	....	....
No. **68** Ratchet Head...........each	1.53	1.76	....	....	....	....
Ratchet Handle...........complete	2.34	2.46	3.77	4.29	....	....

No. 00 Toledo Ratchet Pipe Threaders

Capacity, ⅛ to ¾-Inch Pipe Inclusive



Threads pipe in corners and cuts standard threads of full taper. Die heads are instantly changed. Die segments can be removed and reground. Complete tool consists of ratchet handle and ⅛, ¼, ⅜, ½ and ¾-inch die heads complete with right-hand dies. If complete tool is not desired, ratchet and any combination of die heads may be ordered.

Special ⅜, ½, ¾-inch left-hand die heads and dies can be furnished; information furnished upon application for these and other special die heads and dies.

			Ship. Wt., Lb.
No. **00**, ⅛ to ¾-Inch, Complete..........	each	**$16.30**	9¾
¼ to ¾-Inch, Complete..........	each	**13.50**	8¼
⅜ to ¾-Inch, Complete..........	each	**10.70**	7
½ to ¾-Inch, Complete..........	each	**7.90**	5½
Ratchet Handle Only..................	each	**2.30**	3
⅛, ¼, ⅜, ½ or ¾-Inch Die Head with Right-Hand Dies..........................	each	**2.80**	2
Right-Hand Dies, Each Size, ⅛, ¼, ¾, ½, or ¾-Inch..........................	per set	**1.50**	2
Steel Carrying Case..................	each	**1.45**	4

No. 11 Toledo Ratchet Pipe Threading Devices

Capacity, ⅛ to 1¼-inch Pipe

Complete tool consists of ratchet, r-h. die heads with dies in a carton.

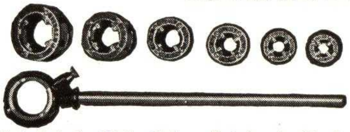
Die heads instantly changed by pulling ratchet pawl knob. Die segments can be removed and reground.

No.	Description	Wt. Lb.	Each
11	Complete, ⅛ to 1¼-Inch Size..........	18	**$25.30**
..	Ratchet Only..........................	3¼	**2.90**
..	⅛, ¼, ⅜, ½, ¾, 1, 1¼-Inch. Die Head with R-H. Dies..........................	1¾	**3.20**
..	⅛, ¼, ⅜, ½, or ¾-Inch Dies Only.......	1	**1.50**
..	1 or 1¼-Inch Dies Only................	1	**1.90**
..	Steel Carrying Case...................	8	**2.30**

Any combination may be ordered. *Per set.

No. 12 Toledo Ratchet Pipe Threading Devices

Capacity, ½ to 2-inch Pipe



Die heads changed by pulling ratchet pawl knob. Special dies for electric conduit, brass orcopperpipe.Complete tool has ratchet handle, ½, ¾, 1, 1¼, 1½ and 2-inch die heads with dies. Any combination of heads may be ordered.

			Wt. Lb.
No. **12**, **½** to **2**-inch, Complete..........	each	**$24.40**	26¼
Ratchet Only..........................	each	**3.50**	6
⅛,¼,⅜,½ or **¾**-In. Die Head with R-H Dies..	each	**3.00**	3
1 or **1¼**-Inch Die Head with R-H. Dies..	each	**3.50**	3½
1½-Inch Die Head with R-H. Dies......	each	**3.95**	4
2-Inch Die Head with R-H. Dies........	each	**3.95**	4½
⅛, ¼, ⅜, ½ or **¾**-Inch Dies..........	per set	**1.50**	⅛
1 or **1¼**-Inch Dies..................	per set	**1.90**	3/16
1½ or **2**-Inch Dies..................	per set	**2.50**	½

We are as near as your nearest telephone.

Toledo 3-Way Pipe Threading Devices

No. 30 Threads ⅜, ½ and ¾-Inch Pipe
No. 31 Threads ½, ¾ and 1-Inch Pipe

A light, small tool, easy to operate. Each die head is on center thereby insuring a perfectly balanced tool. Dies are removable and can be reground when dull or replaced at a small expense.

No.	30	31
Complete ... each	$8.80	$9.35
⅜-Inch Dies, Set of 4 Segments, Wt. 1 Lb.	1.50	.....
½, ¾-Inch Dies, Set of 4 Segments, Wt. 1 Lb.	1.50	1.50
1-Inch Dies, Set of 4 Segments, Wt. 1 Lb.	....	1.90
Shipping Weight, Complete ... pounds	5¼	8¼

No. 0 Toledo Adjustable Pipe Threading Devices

Capacity, ⅛ to ¾-Inch Pipe

Will cut over or under-size and standard threads. Receding-die principle for threading ½ and ¾-inch pipe. Consists of a tool body, two handles, set of ⅛ to ¾-inch right-hand dies, bushings, and an instruction card. Length overall, 24 inches.

	Each	Ship. Wt. Lb.
No. 0, R.H., ⅛ to ¾-Inch, Complete	$14.65	9½
No. 0, R.H., ¼ to ¾-Inch, Complete	12.80	9
Right-Hand Dies, Each Size, ⅛, ¼x⅜ or ½x¾-Inch ... per set	1.60	1

Left-hand dies are also available, prices upon request.

Toledo Adjustable Pipe Threading Devices

Capacity, 1 to 2-inch Pipe

Consists of the tool body, two handles, and complete set of 1 to 2-inch right-hand dies and bushings. Also furnished for cutting left hand threads.

No.	Description	Ship. Wt. Lb.	Each
1	R.H., Plain, Complete, 1 to 2-Inch	20	$12.90
1	L.H., Plain, Complete, 1 to 2-Inch	20	14.05
1A	R.H., Ratchet, Complete, 1 to 2-Inch	23	15.20
1A	L.H., Ratchet, Complete, 1 to 2-Inch	23	17.55
	1 to 2-Inch R-H. Dies, Complete Set ... each		4.00
	1, 1¼, 1½-Inch R-H. Dies, Single Set ... each		.85
	2-Inch R-H. Dies, Single Set ... each		1.45
	1, 1¼, or 1½-Inch Dies, L.H. or Wrought Iron Pipe R.H., Single Set ... each		1.15
	2-In. Dies, L.H. or Wrt. Iron Pipe R.H., Sgl. Set. each		1.75
	1, 1¼, 1½, or 2-Inch R-H. Brass Pipe Dies ... each		1.15

No. 1BR Toledo Adjustable Pipe Threading Devices

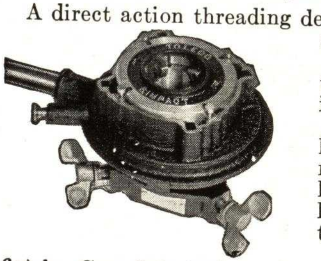
Cap. 1 to 2-In. Pipe Incl.

For brass, copper, iron, or steel pipe. Adjustable rear guide; no bushings required. Separate set of dies for each size pipe; 2-inch dies are high speed steel. Pipe holder will take 2-inch coupling to permit cutting short nipples. Set includes complete set 1 to 2-inch right-hand dies.

			Ship. Wt. Lb.
No. 1BR, Right-Hand Ratchet, Complete	each	$17.55	23
Complete Set of Right-Hand Dies	each	4.00	2
1, 1¼, or 1½-Inch Right-Hand Dies	per set	.85	1
2-Inch Right-Hand Dies	per set	1.45	1
1, 1¼, or 1½-Inch Dies for W. I. Pipe	per set	1.15	1
2-Inch Dies for W. I. Pipe	per set	1.75	1
1, 1¼, 1½, or 2-Inch Brass Pipe Dies	per set	1.15	1

Toledo Simpact Adjustable Ratchet Pipe Threading Devices

Self Contained—Capacity, 1 to 2-inch Pipe



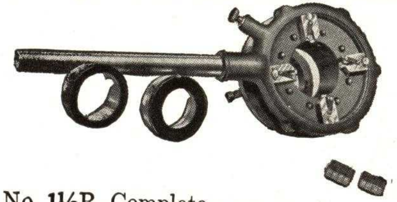
A direct action threading device in which the dies bear against tapered steps. Pockets in head collect the oil and continually drip it on the dies when cutting. Dies made of finest grade high speed steel and can be reground. The three-jaw pipe holder is designed for easy handling and accurate centering. Tubular handle. Tool body has black crackle finish. Complete tool consists of the tool body, one set of 1 to 2-inch high speed steel dies and the 24-inch handle.

Each, Shipping Weight, 24 Pounds	$19.90
Dies, R. H. Complete Set, 1 to 2-Inch ... per set	3.20

No. 1½R Toledo Adjustable Ratchet Threading Devices

Capacity, 2½ and 3-Inch Pipe
Capacity, 2 to 3-Inch Tubing

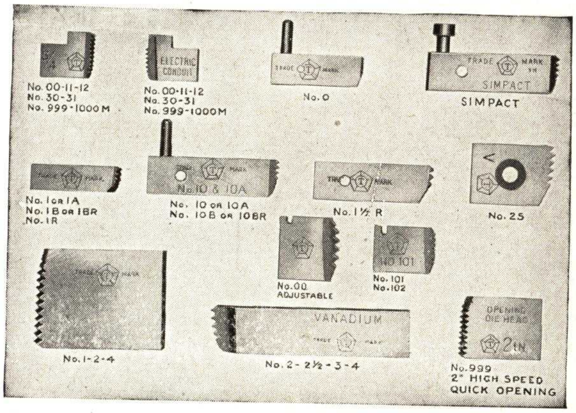
Complete outfit consists of the tool body, a two-piece handle, dies for each size within its capacity, necessary bushings, and set-screw wrench. Packed in wooden box.



When ordering, be sure to state whether the standard pipe thread tool or the special oil well tubing tool is desired.

	Standard	Special
No. 1½R, Complete ... each	$31.65	$35.15
Dies per Set of 4 Segments, Wt. 1 Pound	2.80	2.80
No. Threads to the Inch	8	11½
Shipping Weight, Complete ... pounds	46	46

Toledo Dies



This illustration shows a single die segment of each of the various types used in Toledo pipe threaders.

These illustrations are shown so that there may be no confusion as to which particular model any given set of dies may be for.

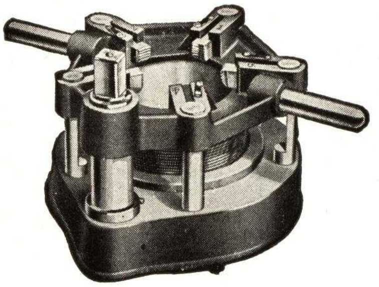
The markings on the dies may also be of interest, indicating as they do, the trade mark that appears on all genuine Toledo dies, which is the equivalent of the signature guaranteeing quality.

There are certain sizes of Toledo dies made of tungsten high speed steel, others from special high carbon alloy, and other sizes from Vanadium.

The variation in the kinds of steel used is the result of years of experience as to which will give the best possible service.

Prices upon application.

Toledo Geared Adjustable Pipe Threading Devices



Easy operating large threader. Operated either by ratchet handle or instantly converted into power machine with a Toledo power drive.

Furnished with complete set of dies, bushings, set-screw wrench, and ratchet handle.

No. 2—Capacity, 2½ to 4-Inch Pipe Inclusive

Weight, 95 pounds.

No. 2, Right-Hand Threads	each	**$64.50**
Dies, Each Size, **2½**, **3**, **3½** or **4**-Inches	per set	**4.65**

No. 2BR—Capacity, 2½ to 4-Inch Pipe Inclusive

For brass or copper, as well as iron or steel pipe.

Fitted with three broad-faced chuck jaws and micrometer line guide bars. No bushings are required.

Weight, 95 pounds.

No. 2BR, Right-Hand Threads	each	**$70.35**
Dies, Each Size, **2½**, **3**, **3½** or **4** Inches	per set	**4.65**

No. 25BR—Capacity, 2½ to 6-Inch Pipe Inclusive

For brass or copper, as well as iron or steel pipe.

Fitted with four broad-faced chuck jaws and micrometer line guide bars. No bushings are required.

Easy positive die change. Extra set of dies furnished.

Weight, 175 pounds.

No. 25BR, Right-Hand Threads	each	**$134.00**
Dies, Each Size	per set	**4.65**

No. 2½—Capacity, 5 and 6-Inch Pipe

Weight, 187 pounds.

No. 2½, Right-Hand Threads	each	**$107.00**
Dies, Each Size, **5** or **6** Inches	per set	**7.00**

No. 3—Capacity, 5, 6 and 8-Inch Pipe

Weight, 220 pounds.

No. 3, Right-Hand Threads	each	**$156.00**
Dies, Each Size, **5**, **6** or **8**-Inches	per set	**7.00**

No. 4—Capacity, 10 and 12-Inch Pipe

Weight, 373 pounds.

No. 4, Right-Hand Threads	each	**$274.00**
Dies, Each Size, **10** or **12**-Inches	per set	**11.70**

Toledo Universal Drive Shafts

Especially designed to operate geared threading and cutting tools with power pipe machines. One end of the shaft is held in the chuck of the pipe machine and the socket is slipped over the driving pinion of the threading or cutting tool.

Shaft is extra long, measuring 20 inches, which permits inserting through spindle of No. 999 Toledo Machine and operating tools from rear of machine.

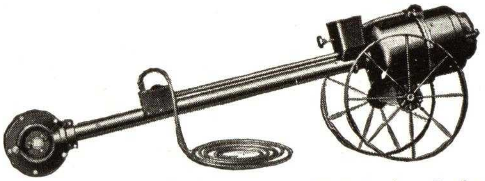
Socket is fitted with set-screw and adjustable for large or small driving pinions of the pipe tools.

Overall length, 64½ inches. Shipping weight, 42 pounds.

Each **$24.00**

Toledo Standard Power Drives

1½-Hp. Single-Phase Motor, 115-230 Volts, A.C.
1½-Hp. 3-Phase Motor, 220-440 Volts, A.C.



Designed to electrically operate Toledo hand threading and cutting devices for 2½ to 12-inch pipe. Also used to turn sheet metal rolls, operate hoisting winches to pull electric cable through conduit, and on many other machines requiring hand cranking methods of operation.

Drive consists of a specially designed electric motor mounted in a housing which also encloses a transmission gearing, communicating with a driving shaft extending to the operating end of the shaft housing. Mechanism is mounted on iron wheels. Diameter of wheels, 18 inches.

The driving head is furnished with two driving bushings to fit the two sizes of pinions used on the various Toledo tools. At slow speed, pinion rotates at 38 rpm.; high speed, 57 rpm. Can be furnished with a.c. single-phase motor, 115–230 volts; or a.c. 3-phase motor, 220–440 volts. Other motors quoted on request. Always specify voltage.

Furnished with 20 feet of flexible cable.

Length overall, 6 feet. Net weights, 230 to 273 pounds.

Description	Each	Ship Wt., Lb.
With **50** or **60**-Cycle Motor, Specify Voltage.	**$300.00**	325

Special Attachments for No. 1 Tool

To thread 1 to 2-inch pipe with a Toledo Power Drive, this attachment, which consists of a special yoke and pair of short handles, must be used. Shipping weight, 6 pounds.

Each **$3.00**

Toledo Super Power Drives

2½-Hp. 3-Phase Motor, 220-440 Volts, A.C.

Similar in appearance to the Toledo Standard Drive, but slightly larger. Driving head rotates at 57 rpm. low speed and 97 rpm. high speed. Controlled by a specially designed switch conveniently located on the drive shaft casing. Flexible cable is 20 feet long.

Net weight, 278 pounds; shipping weight, 396 pounds.

Each **$390.00**

Toledo Universal Power Drives

½-Hp. Universal Motor—115 or 230 Volts, A.C. or D.C.

Motor is reversible so that operator may back dies off the completed thread by a turn of the switch.

May be used for opening or closing large, manually operated sluice gates.

Driving head is slipped on the valve stem and may be turned for either horizontal or vertical stem valves.

Motor automatically adjusts speed to load, increasing power and decreasing speed on heavy loads and increasing speed on light loads. When under load, driving bushing rotates about 30 rpm.

Furnished with 20-foot rubber covered cable.

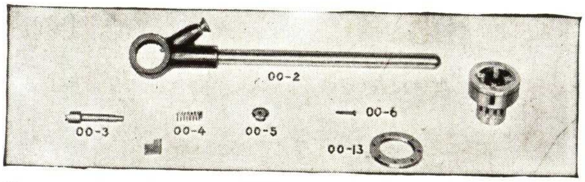
Description		Each	Ship Wt. Lb.
115 or **230** Volts, Specify Voltage		**$240.00**	242
Rubber Tired Wheels	per pair	**12.00**	30

Special Adjustable Safety Devices

Fits in driving head and can be adjusted for eight different loads. It will slip when any overload is applied, and is desirable when drive is used to operate sluice gates or gate valves. Shipping weight, 26 pounds.

Each **$60.00**

Parts for No. 00 Toledo Ratchet Pipe Threading Devices

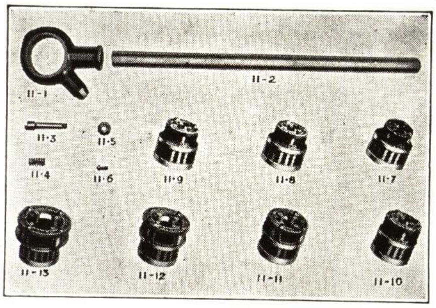


No.	Description	Each
.....	Regular Dies, R.H., ⅛ to ¾ In. per complete set	$7.50
.....	Regular Dies, R.H., ⅛, ¼, ⅜, ½ or ¾ per set	1.50
00– 2	Ratchet Handle, Complete (with Ratchet Pawl)	2.30
00– 3	Ratchet Pawl	.35
00– 4	Ratchet Spring	.11
00– 5	Ratchet Pawl Knob	.17
.....	Ratchet Pawl, Complete	.63
.....	Ratchet Head Only	1.46
.....	Ratchet Handle Only	.58
*00–6	Die Head Cover Screw	.05
00–13	Die Head Cover, Only, for Regular Die Head	.29
.....	Regular ⅛, ¼, ⅜, ½ or ¾ In. Die Head with Dies, R.H., Each Size	2.80
.....	Steel Carrying Case	1.45
.....	Regular Head only—no cover, Less Dies, ⅛, ¼ or ⅜ Inch	1.10
.....	Regular Die Head Only—no cover, Less Dies, ½ or ¾ Inch	1.37
.....	Regular Die Head with ⅜ Inch Left-Hand Dies, or Inverted Dies	3.50
.....	Regular Die Head with ½ or ¾ Inch Left Hand Dies, or Inverted Dies, Each Size	4.10
.....	Regular Left Hand Dies, or Special Inverted Dies, ⅜, ½ or ¾ Inch per single set	2.34

*When ordering No. 00–6 Die Head Cover Screws, always specify size die head with which screws are to be used.

No charge for cover screws when furnished with Die Heads.

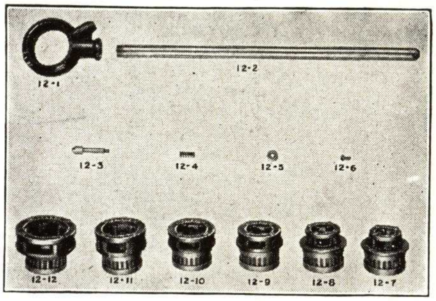
Parts for No. 11 Toledo Ratchet Pipe Threading Devices



When ordering repair parts always specify the serial number and the prefixing letter, if any, which appear on the brass name plate of the tool.

No.	Description	Each
....	½ to 1¼-Inch Dies, R.H.....per complete set	$6.80
....	⅛ to 1¼-Inch Dies, R.H.....per complete set	11.30
....	⅛, ¼, ⅜, ½ or ¾-In. Dies, R.H. per single set	1.50
....	1 or 1¼-Inch Dies, R.H.........per single set	1.90
....	Ratchet Handle Complete	2.90
11–1	Ratchet Head	1.75
11–2	Handle	.70
11–3	Ratchet Pawl	.35
11–4	Ratchet Spring	.11
11–5	Ratchet Pawl Knob	.17
....	Ratchet Pawl Complete	.63
....	Die Head Cover (Specify Size)	.35
11–6	Die Head Cover Screw	.05
Die Head with Dies:		
	11–7, ⅛": **11–8**, ¼": **11–9**, ⅜": **11–10**, ½": **11–11**, ¾": **11–12**, 1": **11–13**, 1¼"...............each	$3.20

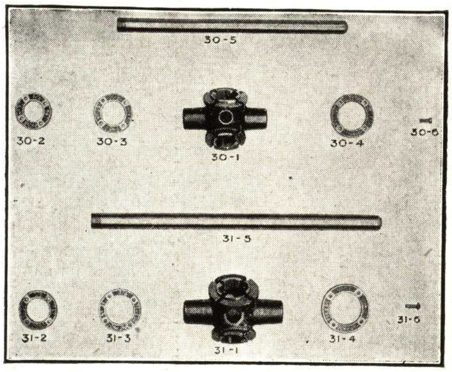
Parts for No. 12 Toledo Ratchet Pipe Threading Devices



When ordering specify serial number and prefixing letter, if any, which appear on brass name plate of tool.

No.	Description	Each
.....	Dies, R.H., Complete Set, ½ to 2 Inches	$11.80
.....	Dies, R.H., Single Set, ½ or ¾ Inch	1.50
.....	Dies, R.H., Single Set, 1 or 1¼ Inches	1.90
.....	Dies, R.H., Single Set, 1½ or 2 Inches	2.50
.....	Dies, R.H., Single Set, ⅛, ¼ or ⅜ Inch	1.50
.....	Ratchet Handle, Complete	3.50
12–1	Ratchet Head	2.05
12–2	Handle	.87
12–3	Ratchet Pawl	.35
12–4	Ratchet Spring	.11
12–5	Ratchet Pawl Knob	.17
.....	Ratchet Pawl, Complete	.64
.....	Die Head Cover (Specify Size)	.35
12–6	Die Head Cover Screw	.05
12–7	½-Inch Die Head with Dies	3.00
12–8	¾-Inch Die Head with Dies	3.00
12–9	1-Inch Die Head with Dies	3.50
12–10	1¼-Inch Die Head with Dies	3.50
12–11	1½-Inch Die Head with Dies	3.95
12–12	2-Inch Die Head with Dies	3.95
.....	⅛, ¼ or ⅜-Inch Die Head with Dies	3.00

Parts for Nos. 30 and 31 Toledo Pipe Threading Devices



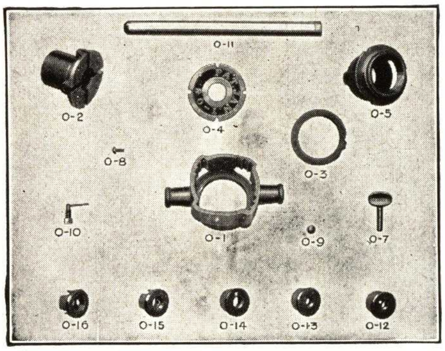
No. 30

No.	Description	Each
30	Tool Body with Covers and Screws	$3.75
....	⅜ to ¾-Inch Dies, R.H.....per complete set	4.50
....	⅜, ½ or ¾-Inch Dies, R.H.....per single set	1.50
30–1	Body Only	2.58
Die Head Covers:		
	30–2, ⅜ Inch; **30–3**, ½ Inch; **30–4**, ¾ Inch.each	.29
30–5	Handle	.52
30–6	Head Cover Screw	.05

No. 31

No.	Description	Each
....	½ to 1-Inch Dies, R.H......per complete set	$4.90
....	½ or ¾-Inch Dies, R.H........per single set	1.50
....	1-Inch Dies, R.H..............per single set	1.90
31	Tool Body with Covers and Screws	4.16
31–1	Body Only	3.10
Die Head Covers:		
	31–2, ½ Inch; **31–3**, ¾ Inch; **31–4**, 1 Inch..each	.29
31–5	Handle	.58
31–6	Head Cover Screw	.05

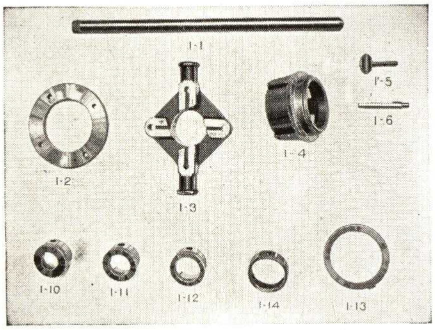
Parts for No. 0 Toledo Adjustable Pipe Threading Devices



No.	Description	Each
0	Tool Body	$8.21
....	⅛ to ¾-Inch Dies, R.H. . . . per complete set	4.80
....	⅛, ¼ and ⅜-In. or ½ and ¾-In. Dies, R.H. . . . per single set	1.60
....	Dies, L.H. . . . per complete set	8.00
....	⅛, ¼, ⅜, ½ or ¾-In. Dies, L.H. per single set	1.60
0– 1	Die Head Case	2.87
*0– 2	Die Head...	3.46
*0– 5	Pipe Holder	
0– 3	Retaining Ring	.41
0– 4	Die Head Cover	.58
0– 7	Thumb Screw	.11
0– 8	Cover Screw	.05
0– 9	Die Spring Disc	.05
0–10	Locking Pin and Spring	.29
0–11	Handle	.70
Bushings:		
	0–12, ⅛ In.; **0–13**, ¼ In.; **0–14**, ⅜ In.; **0–15**, ½ In.; **0–16**, ¾ In. . . . each	.23

*These parts must be ordered together.

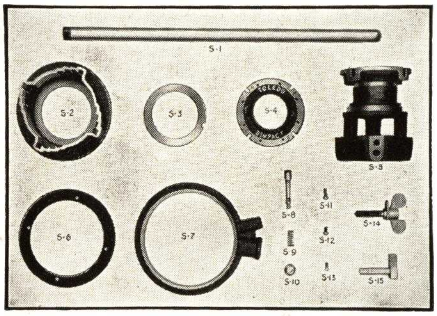
Parts for No. 1 Toledo Adjustable Pipe Threading Devices



No.	Description	Each
1	Tool Body, R.H.	$6.80
....	1 to 2-Inch Dies, R.H. . . . per complete set	4.00
....	1, 1¼ or 1½-Inch Dies, R.H. . . . per single set	.85
....	2-Inch Dies, R.H. . . . per single set	1.45
....	1, 1¼ or 1½-Inch Dies, L.H. . . . per single set	1.15
....	2-Inch Dies, L.H. . . . per single set	1.75
....	1, 1¼ or 1½-Inch Dies for Wrought Iron, Pipe, R.H. . . . per single set	1.15
....	2-In. Dies for Wrt. Iron Pipe, R.H. per single set	1.75
....	1, 1¼, 1½ or 2-Inch Dies for Brass Pipe, R.H. . . . per single set	1.15
1–1	Handle	.70
1–2	Taper Pin Plate	1.75
*1–3	Die Head...	4.39
*1–4	Pipe Holder	
1–5	Thumb Screw	.11
1–6	Taper Pin	.23
....	Die Retaining Spring, Spring Nail, and Pin (One of Each)	.11
Bushings	**1–10**, 1″; **1–11**, 1¼″; **1–12**, 1½″; **1–14**, 2″. . . . . each	.29
1–13	Retaining Ring	.87

*These parts must be ordered together.

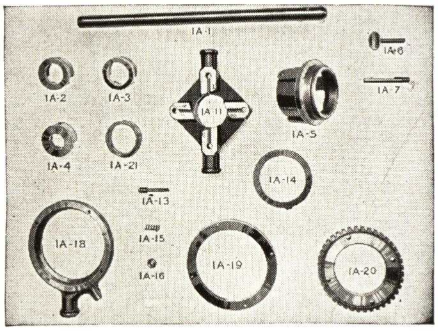
Parts for Toledo Simpact Adjustable Ratchet Pipe Threading Devices



When ordering, specify No. and prefixing letter, if any, which appear on brass name plate of tool.

No.	Description	Each
....	Tool Body Only, R. H.	$16.42
....	Dies, R. H. . . . per set of 4 segments	3.20
S- 1	Handle	.70
S- 2	Die Head Case	5.63
S- 3	Retaining Ring	.87
S- 4	Die Head Cover	.82
S- 5	Die Head and Pipe Holder	3.81
S- 6	Ratchet Case Cover	.76
S- 7	Ratchet Case	2.05
S- 8	Ratchet Pawl, Only	.35
S- 9	Ratchet Pawl Spring	.11
S-10	Ratchet Pawl Knob	.17
S-11	Jaw Post Clip Screw, 3 Required	.05
S-12	Die Head Cover Screw, 8 Required	.05
S-13	Ratchet Case Cover Screw, 4 Required	.05
S-14	Set-Screw, 3 Required	.58
S-15	Jaw and Post, 3 Required	.58
....	Die Spring Disc, 4 Required	.05

Parts for No. 1A Toledo Adjustable Ratchet Pipe Threading Devices

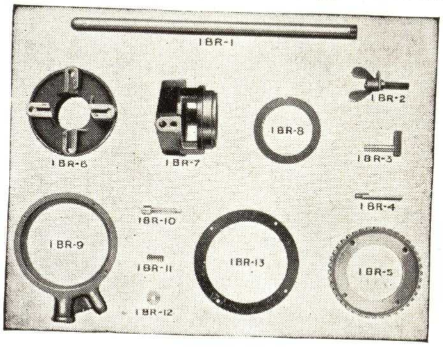


No.	Description	Each
1A	Tool Body, R.H. Only	$9.67
....	1 to 2-Inch Dies, R.H. . . . per complete set	4.00
....	1, 1¼ or 1½-Inch Dies, R.H. . . per single set	.85
....	2-Inch Dies, R.H. . . . per single set	1.45
....	1, 1¼ or 1½-Inch Dies, L.H. . . per single set	1.15
....	2-Inch Dies, L.H. . . . per single set	1.75
....	1, 1¼ or 1½-Inch Dies for Wrought Iron	1.15
	Pipe, R.H. . . . per single set	1.75
....	2-In. Dies for Wrt. Iron Pipe, R. H. per single set	
....	1, 1¼, 1½ or 2-Inch Dies for Brass Pipe, R.H.	1.15
	. . . per single set	.70
1A–1	Handle	.29
Bushings	**1A-2**, 1¼″; **1A-3**, 1½″; **1A-4**, 1″; **1A-21**, 2″. . ea.	
*1A-5	Pipe Holder	4.39
*1A-11	Die Head. .	
1A-6	Thumb Screw	.11
1A-7	Taper Pin	.23
....	Die Retaining Spring, Spring Nail, and Pin (One of Each)	.11

No.	Description	Each	No.	Description	Each
.....	Ratchet Case Screw . .	$.05	1A-16	Ratchet Pawl Knob . .	$ .17
1A-13	Ratchet Pawl . .	.35	1A-18	Ratchet Case . .	2.05
1A-14	Retaining Ring	.87	1A 19	Ratchet Case Cover . .	.76
1A-15	Ratchet Spring	.11	1A-20	Taper Pin Plate	2.34

*These parts must be ordered together.

Parts for No. 1BR Toledo Adjustable Ratchet Pipe Threading Devices

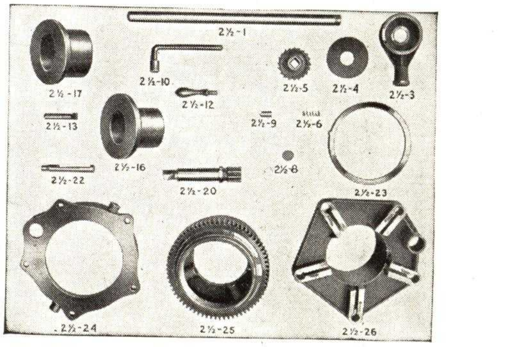


No.	Description	Each
1BR	Tool Body, R.H..	$12.78
....	1 to 2″ Dies, R.H. ....per comp. set	4.00
....	1, 1¼ or 1½″ Dies, R.H. per sgl.set	.85
....	2″ Dies, R.H.... ...per sgl. set	1.45
....	1, 1¼ or 1½″ Dies for Wrt. Iron Pipe, R.H..... ...per sgl. set	1.15
	2″ Dies for Wrt. Iron Pipe, R.H. ...per sgl. set.	1 75
....	1, 1¼, 1½ or 2″ Dies for Brass Pipe, R.H.... ...per sgl. set	1.15
1BR-1	Handle..........	.70

No.	Description	Each
1BR- 2	Set Screw.......	$.58
1BR- 3	Jaw and Post....	.58
1BR- 4	Taper Pin.......	.23
1BR- 5	Pin Plate........	2.34
*1BR- 6	Die Head.. }	4.92
*1BR- 7	Pipe Holder }....	
1BR- 8	Retaining Ring...	.87
1BR- 9	Ratchet Case.....	2.05
1BR-10	Ratchet Pawl.....	.35
1BR-11	Ratchet Spring...	.11
1BR-12	Pawl Knob.......	.17
1BR-13	Ratchet Case Cover.........	.76
....	Ratchet Case Screw.........	.05
....	Die Retaining Spring & Pin, Spring Nail.... ...one of each	.11

*When either part is required, both must be ordered.

Parts for No. 2½ Toledo Geared Adjustable Pipe Threading Devices



No.	Description	Each
2½	Tool Body....	$86.80
....	5″ to 6-In. Dies per comp. set	14.00
....	Dies per single set	7.00
....	Ratchet Comp.	4.10
2½–1	Handle.......	1.17
....	Ratchet Case Screw......	.05
2½–3	Ratchet Case.	1.75
2½–4	Ratchet Case. Cover......	.58
2½–5	Ratchet Wheel	.87
2½–6	Ratchet Spring	.11
2½–8	Ratchet Spring Disc.	.05

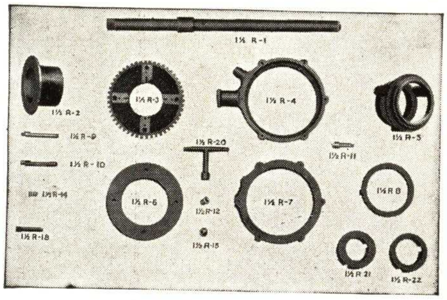
No.	Description	Each
2½–9	Ratchet Pawl.	$.35
2½–10	Set Screw Wrench	.35
*2½–20	Pinion Sleeve. }	7.03
*2½–20	Driving Pinion }	
2½–12	Lifting Handle	.87
2½–13	Set Screw.....	.23
......	4″ Special Bushing....	2.93
2½–17	5-In. Bushing.	2.93
.....	Bushing Screw	.17
2½–22	Taper Pin....	1.46
2½–23	Retaining Ring	2.34
2½–24	Taper Pin Plate	7.03
†2½–25	Gear........ }	67.44
†2½–26	Die Head..... }	

....	Die Retaining Spring and Pin.... }	One of Each..... $.11
....	Die Retaining Spring Screw..... }	

*When either of these parts is required, other should be returned, or both parts be ordered to insure a proper fit.

†When either of these parts is required they must be ordered together, or complete tool body and dies returned.

Parts for No. 1½R Toledo Ratchet Pipe and Tubing Threading Devices

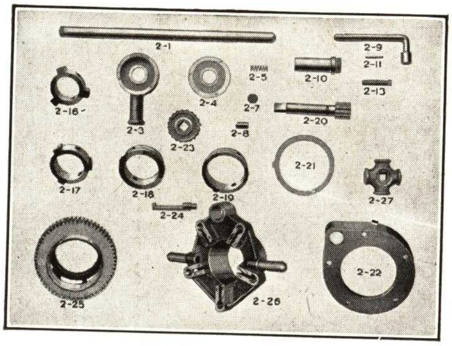


No.	Description	Each
1½R	Tool Body........	$23.46
......	2 to 3″ Dies, 11½-Thread per comp......set	8.40
......	2½ to 3″ Dies, 8-Thread per comp......set	5.60
......	Dies.per single set	2.80
1½R-1	Handle..........	2.11
*1½R-2	Lead Screw }	6.80
*1½R-5	Pipe Holder }....	
1½R-3	Ratchet Die Head.	4.22
1½R-4	Ratchet Case.....	3.16
1½R-6	Taper Pin Plate...	2.58

No.	Description	Each
1½R-7	Ratchet Cover....	$1.40
1½R-8	Retaining Ring..	1.05
1½R-9	Long Taper Pin..	.52
1½R-10	Short Taper Pin..	.52
1½R-11	Ratchet Pawl....	.35
1½R-13	Ratchet Knob....	.17
1½R-14	Ratchet Spring...	.11
....	Ratchet Case Screw.......	.05
....	Die Head Rivet..	.05
1½R-18	Set Screw......	.17
1½R-20	Set Screw Wrench	.35
†1½R-21	2″ Bushing.....	.64
1½R-22	2½″ Bushing....	.64

......	Die Retaining Spring and Pin }	One of Each........ $ .11
......	Die Retaining Spring Screw . }	

Parts for Nos. 2 and 2BR Toledo Geared Adjustable Pipe Threading Devices



Parts for Nos. 2 and 2BR

No.	Description	Each
2	Tool Body.........	$37.53
2BR	Tool Body.........	47.50
....	2½ to 4″ Dies .....per comp. set	18.60
....	Dies...per single set	4.65
....	Ratchet Handle....	4.10
2–1	Handle............	1.17
....	Lifting Handle.....	.70
....	Ratchet Cover Screw	.05
2–3	Ratchet Case......	1.75
2–4	Ratchet Case Cover.	.58
2–5	Ratchet Spring.....	.11
2–7	Ratchet Spring Disc	.05
2–8	Ratchet Pawl......	.35

No.	Description	Each
2– 9	Set Screw Wrench.	$.35
‡2–20	Pinion Sleeve }	4.98
‡2–20	Driving Pinion }...	
2–11	Pinion Retaining Pin	.05
2–13	Set Screw.........	.11
2–16	2½″ Bushing.....	1.05
2–17	3″ Bushing.......	1.05
2–18	3½″ Bushing.....	1.05
2–19	4″ Bushing.......	1.05
2–21	Retaining Ring....	1.17
2–22	Taper Pin Plate...	2.34
2–23	Ratchet Wheel....	.87
2–24	Taper Pin........	.35
*2–25	Gear.... }	26.97
*2–26	Die Head }........	

....	Die Retaining Spring Screw.... }	One of Each.................... $.11
....	Die Retaining Spring......... }	
....	Die Retaining Pin... .... }	

Additional Parts for No. 2BR

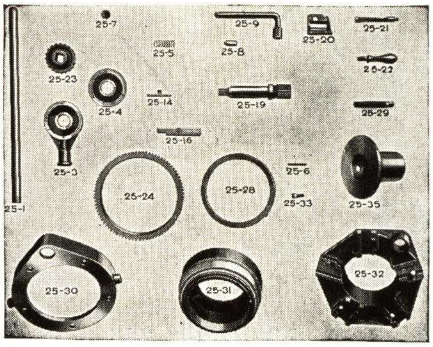
....	*Gear }	$31.67
....	*Die Head }.......	
....	Jaw Post Clip.....	.05
....	Jaw and Sliding Post.	$1.40
....	Set Screw..........	.46
....	Jaw Post Clip Screw	.05

*When either one of these parts is required they must be ordered together, or the complete tool body and dies returned to factory to be properly repaired or replaced.

†For special tool.

‡When either one of these parts is required, the other should be returned so the new one can be properly fitted, or both parts should be ordered to insure a proper fit.

Parts for Nos. 25 and 25BR Toledo Adjustable Pipe Threading Devices



No.	Description	Each
25BR	Tool Body Only	$123.16
......	Ratchet, Complete	4.10
25–1	Handle	1.17
......	Ratchet Case Screw	.05
25–3	Ratchet Case	1.78
25–4	Ratchet Case Cover	.58
25–5	Ratchet Spring	.10
25–6	Pinion Retaining Pin	.05
25–7	Ratchet Spring Disc	.05
25–8	Ratchet Pawl	.35
25–9	Set Screw Wrench	.35
......	Die Retaining Screw	.17
......	Taper Pin Washer	.05
......	Die Collar	.05
......	Dies, per Set of 5 Segments	4.65
*25–14	Adjusting Ratchet	2.34
......	Die Holder Spring Cover	.05
*25–16	Die Holder	2.93
......	Head Cover Screws	.05
**25–19	Pinion Sleeve Driving Pinion	7.03
25–20	Die Head Cover	.46
25–21	Taper Pin	1.75
25–22	Lifting Handle	.87
25–23	Ratchet Wheel	.87
†25–24 †25–31 †25–32	Gear Band Pipe Holder Die Head	55.71
......	Die Holder Spring	.05
......	*Die Holder Pawl	.58
......	Die Holder Pawl Pin	.05
25–28	Retaining Ring	2.34
25–29	Set Screw	.76
25–30	Taper Pin Plate	4.69
25–33	Bushing Screw	.17
......	Die Head Button	.05
25–35	Bushing (2½, 3, 3½, 4, 4½, or 5 Inches)	2.93
......	Jaw and Sliding Posts	4.69
......	Set Screw	.48
......	Jaw Post Clip	.24
......	Jaw Post Clip Screw	.05

*When these parts are ordered the old parts must be returned to factory in order to properly match up new parts.

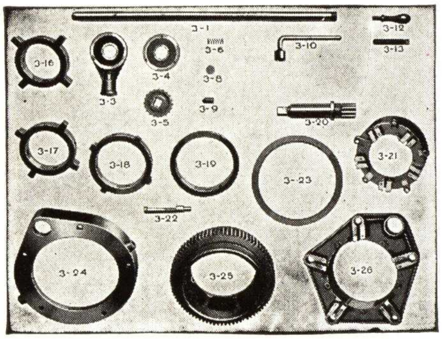
**When either one of these parts is required, the other part should be returned so the new one can be properly fitted or both parts should be ordered to insure proper fit.

†When any of these parts are required they must be ordered together, or complete tool body returned to the factory for proper repairs.

When ordering parts always specify serial number and prefixing letter, if any, which appear on the brass name plate of the tool.

Prices apply only for standard parts; other tool parts will be quoted specially as occasion arises.

Parts for Nos. 3 and 4 Toledo Geared Adjustable Pipe Threading Devices



Parts for No. 4 are of the same general appearance as No. 3 parts, except that they are much larger.

	No. 3		No. 4	
Description	Part No.	Each	Part No.	Each
Tool Body with Die Head Bushing	....	$124.33	....	......
Tool Body without Die Head Bushing	....	......	....	$215.83
4½, 5, 6 and 8-In. Dies per comp. set	....	21.00	....	......
Dies............per single set	....	7.00	....	11.70
10 and 12-In Dies.per comp. set	....	......	....	23.40
10 or 12-In. Milling Dies ....per single set	....	......	....	11.70
Ratchet Handle Complete	....	5.27	....	5.27
Handle	3–1	1.46	4–1	1.46
Ratchet Cover Screw	....	.05	....	.05
Pinion Retaining Pin	....	.05	....	.05
Ratchet Case	3–3	2.05	4–3	2.05
Ratchet Case Cover	3–4	.58	4–4	.58
Ratchet Wheel	3–5	.87	4–5	.87
Ratchet Spring	3–6	.11	4–6	.11
Ratchet Spring Washer	3–8	.05	4–8	.05
Ratchet Pawl	3–9	.35	4–9	.35
Set Screw Wrench	3–10	.35	4–10	.35
*Pinion Sleeve *Driving Pinion	3–20	7.03	4–20	20.52
Lifting Handle	3–12	.87	4–12	.87
Set Screw	3–13	.23	4–13	.23
Die Retaining Spring and Pin, and Die Retaining Spring Screw..........one of each	....	.11	....	.11
4½-Inch Bushing	3–16	2.93	....	......
5-Inch Bushing	3–17	2.93	....	......
6-Inch Bushing	3–18	2.93	....	......
10-Inch Bushing	....	......	4–16	7.03
9-Inch Bushing	....	......	4–17	7.03
Taper Pin	3–22	1.75	4–22	2.63
Retaining Ring	3–23	2.93	4–23	5.86
Taper Pin Plate	3–24	5.86	4–24	17.59
‡Gear ‡Die Head	3–25 ¶3–26	96.77	4–25 4–26	170.08
Die Head Bushing Screw	....	.05	....	.05

*When either one of these parts is required, the other part should be returned so the new one can be properly fitted, or both parts should be ordered to insure a proper fit.

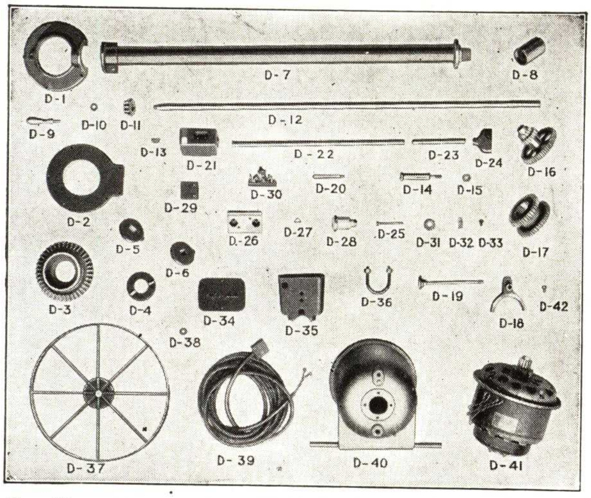
‡When either one of these parts is required, they must be ordered together, or the complete tool body and dies returned to the factory to be properly repaired or replaced.

¶Including of die head bushing.

When ordering parts, always specify the serial number which appears on the brass name plate of the tool.

Prices apply only for standard parts—other tool parts will be quoted specially as occasion arises.

Parts for Toledo Power Drives

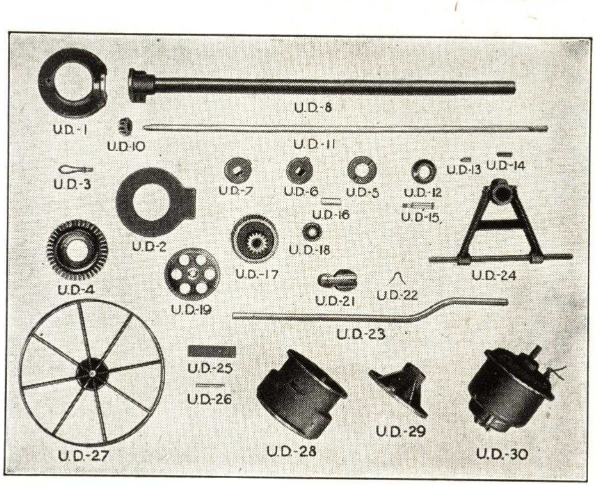


Specify part as well as serial number of drive. When any part of motor gearing assembly (part No. D16) is needed, old assembly should be returned for salvage.

No.	Description	Each
D- 1	Bevel Gear Case	$6.00
D- 2	Bevel Gear Case Cover	6.00
D- 9	Lifting Handle	.90
D- 3	Bevel Gear	8.70
D- 4	Driving Bushing Collar	.78
D- 5	No. 3 Driving Bushing	2.10
D- 6	No. 2 Driving Bushing	2.10
D- 7	Shaft Casing	28.20
D-10	Bevel Pinion Nut	.18
D-11	Bevel Pinion	7.20
D-13	Bevel Pinion Key	.18
D-12	Driving Shaft	5.10
D-14	Motor Gearing Stud	3.60
D-15	Motor Gearing Stud Nut	.18
D-16	Motor Gearing, Including Bronze Pinion	13.20
D-31	Motor Pinion and Key	1.34
D- 8	Sliding Gear Drum	4.20
D-17	Sliding Gears	9.00
D-32	Sliding Gear Locating Spring	.10
D-33	Sliding Gear Locating Pin	.10
D-18	Shifter Fork and Set Screw	1.26
D-19	Shifter Fork Push Rod and Knob	1.62
D-20	Shifter Fork Stud	.90
D-21	Switch Box	2.94
D-39	20 Feet Cable and Connector—3-Wire	10.50
D-39	20 Feet Cable and Connector—2-Wire	6.30
D-29	Connector for 3-Wire Cable	3.60
D-29	Connector for 2-Wire Cable	2.40
D-30	Toggle Joint Switch	3.60
D-22	Switch Box Conduit	.72
D-23	Junction Box Conduit	.30
D-24	Condulet (Specify Serial No. of Drive)	1.20
D-34	Junction Box Cover	.90
D-35	Junction Box	6.00
D-36	U-Bolt	.36
D-37	Wheel	2.40
D-38	Wheel Retaining Washer	.05
D-40	Gear Housing, (Specify Serial No. of Drive)	37.20
D-41	Motor, (Specify Serial No. of Drive)	*
D-25	Oil Tube	.36
D-42	Oil Hole Cover	.36
.....	Wheel Retaining or Case Cover Screws	.05
.....	Upper or Lower Bearing Screws	.10
.....	Sliding Gear Drum Screw	.20
.....	Switch Box Screw	.05
.....	Switch Handle Mechanism	2.40
.....	Junction Box Cover Screw	.05
.....	Condulet Screw	.05
.....	Gear Housing Screw	.10
.....	Bronze Pinion Only	6.60
.....	No. 2 Safety Driving Bushing	2.40
.....	No. 3 Safety Driving Bushing	2.40

*$100.00 or $125.00.

Parts for Toledo Universal Power Drives



When ordering parts, specify part number and serial number of drive.

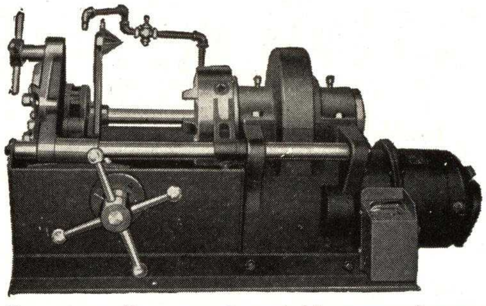
No.	Description	Each
UD- 1	Bevel Gear Case	$6.00
UD- 2	Bevel Gear Case Cover	6.00
......	Bevel Gear Case Cover Screw	.05
UD- 3	Lifting Handle	.90
UD- 4	Bevel Gear	8.70
UD- 5	Driving Bushing Collar	.78
......	Driving Bushing Collar Screw	.05
UD- 6	No. 2 Driving Bushing	2.10
UD- 7	No. 3 Driving Bushing	2.10
......	No. 2 Safety Driving Bushing	2.40
......	No. 3 Safety Driving Bushing	2.40
UD- 8	Shaft Casing	24.00
......	Upper Bearing Screw	.08
UD-10	Bevel Pinion	7.20
......	Bevel Pinion Nut	.18
......	Pinion Gear Key	.10
UD-11	Driving Shaft	5.10
UD-12	Shaft Casing Collar	1.50
UD-13	Shaft Casing Saddle Pawl	.30
UD-14	Shaft Casing Saddle Pawl Spring	.18
......	Shaft Casing Collar Screw	.24
UD-15	Pinion Stud	1.80
......	Gear Stud Nut	.18
......	Gear Stud Key	.05
UD-17*	Pinion and Helical Gear with Bronze Bushings..per pair	15.60
......	Shaft Gear Retaining Screw	.10
......	Shaft Gear Retaining Washer	.18

*Two each assembled.

No.	Description	Each
UD-18	Grease Retaining Washer	$ .72
UD-19	Internal Gear	9.60
......	Internal Gear Key	.05
UD-21	Switch Adapter Plate	1.80
......	Switch Base Screw	.05
......	Switch Base and Mechanism	3.60
......	Switch	4.80
......	Switch Knob	.60
......	Switch Cover	.72
......	Cable with Connector and Plug	2.40
......	Attach. Plug	.30
......	Connector	.72
......	Connector Body Only	.48
......	Connector Base Only	.24
UD-22	Conduit Clip	.05
UD-23	Conduit	.60
......	Conduit Clip Screw	.05
......	Wire Cover Screws	.05
UD-24	Shaft Casing Saddle	18.00
......	Shaft Casing Saddle Cap Screws	.05
UD-25	Wire Cover Plate	.24
UD-26	Rear Motor Bearing Oiler	.36
UD-27	Wheels	2.40
......	Wheel Retaining Screw	.05
......	Wheel Retaining Washers	.05
UD-28	Gear Housing	18.00
UD-29	Gear Housing End Plate	8.40
......	Gear Housing Screw	.10
UD-30	Motor	67.20
......	Motor Brush	.48
......	Motor Brush Cap	.60
......	Grease Plug	.05
......	Oil Hole Cover	.36

No. 999 Toledo Power Pipe Machines

Capacity ½ to 2-Inch Pipe Inclusive



An efficient, small, compact, portable power pipe machine. The ½-hp. ball-bearing universal motor operates from any 110-volt lamp socket. Sturdy drum-type switch. Other motors on request.

Can be furnished as listed below, complete with ½ to 2-inch right-hand dies, bushings, complete set of four cutter blades, chuck wrench, cutter blade wrench, 10 feet of cable with connectors and 1 gallon of thread cutting oil.

CUTTING AND THREADING SPEEDS.—2-inch pipe is cut off in 10 seconds; 2-inch pipe is threaded in 22 seconds with the Super Model, and in 30 seconds with the Standard Model.

Either machine can be furnished with ⅛, ¼ or ⅜-inch sizes if desired.

Super Model

With Quick-Opening Die Heads and Dies

Description	Each	Ship. Wt. Lb.
No. 999, Complete with 6 Q-O. Die Heads and ½ to 2-Inch R-H. Pipe Dies (6 Sets)	$420.00	473
No. 999, Complete with 3 Q-O. Die Heads and ½ to 2-Inch R-H. Pipe Dies (6 Sets)	372.00	432
⅛ to ¾-Inch Q-O. Die Head Only, No Dies..	16.00	6
1 or 1¼-Inch Q-O. Die Head Only, No Dies..	16.00	6
1½ or 2-Inch Q-O. Die Head Only, No Dies..	16.00	6
⅛, ¼, ⅜, ½ or ¾-Inch R-H. Pipe Dies ....per set, each size	3.90	1
1, 1¼, 1½, or 2-Inch R-H. Pipe Dies ....per set, each size	4.80	1
⅛, ¼, ⅜, ½, ¾, 1, 1¼, and 1½-In. Bushings..	.40	1½
*Cutter Blades.............................. ..	1.20	1⅛
Cutter Blades...................per set of 4	4.80	1

Standard Model

With Non-Opening Die Heads and Dies

Description	Each	Ship. Wt. Lb.
No. 999, Complete with 6 Non-Opening Die Heads and ½ to 2-Inch R-H. Pipe Dies (6 Sets)..	$330.00	434
No. 999, Complete with 9 Non-Opening Die Heads and ⅛ to 2-Inch R-H. Pipe Dies (9 Sets)..	344.88	440
One Complete Set ½ to 2-Inch Die Heads and Covers Only, Less Dies..................	15.96	17
½-Inch Die Head and Cover Only, Less Dies.	2.40	2
¾-Inch Die Head and Cover Only, Less Dies.	2.40	2
1-Inch Die Head and Cover Only, Less Dies..	2.64	3
1¼-Inch Die Head and Cover Only, Less Dies	2.64	3
1½-Inch Die Head and Cover Only, Less Dies	2.88	4
2-Inch Die Head and Cover Only, Less Dies..	3.00	4
⅛-Inch Die Head and Cover Only, Less Dies.	3.00	2
¼-Inch Die Head and Cover Only, Less Dies.	3.00	2
⅜-Inch Die Head and Cover Only, Less Dies.	3.00	2
One Complete Set ½ to 2-Inch R-H. Pipe Dies Only	17.16	2
⅛, ¼, ⅜, ½, or ¾-Inch R-H. Carbon Steel Pipe Dies Only...........per set, each size	1.56	2
1 or 1¼-Inch R-H. High Speed Steel Pipe Dies Only...................per set, each size	3.12	4
1½ or 2-Inch R-H, High Speed Steel Pipe Dies Only................per set, each size	3.90	4

*When ordering single cutter blades, always specify whether (A) outside skew or (B) inside skew is required.

Dies for bolt, electric conduit, and left-hand pipe threads can also be supplied.

Toledo Nipple Chucks

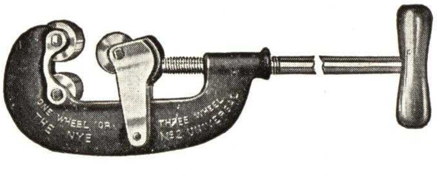
Capacity: No. 2—½ to 2 Inches Inclusive; No. 4—1 to 4 Inches Inclusive

For cutting short nipples. No. 2 is used in the No. 999 or 2-inch high speed machine. No. 4 is used in the No. 1-2-4 machine. Nipple is placed loosely in the bushing. Handwheel in the rear of the spindle is tightened and locks the nipple in place. When the nipple is threaded, the handwheel is loosend and the nipple removed. A bushing for each size is furnished with each outfit.

No.....................................	2	4
Each....................................	$24.00	72.00
Shipping Weight....................pounds	32	72

Nye Universal Pipe Cutters

One or Three-Wheel



This malleable iron cutter is made with a swinging block wheel holder and has large size rollers spaced far apart. When used as a 3-wheel cutter, this method insures an equalized distribution of cutting. Has hollow body; supported wheel block. Equipped with a spring to hold block against screw end of handle.

Furnished with 2 rollers and 1 Nye smooth edge wheel unless ordered equipped with 3 cutter wheels.

Can be converted to a 3 wheel cutter by removing the 2 rollers and inserting the extra cutter wheels.

No.................................	1	2	4
Each...............................	$4.10	5.48	18.25
Size Cut..........................inches	⅛-1	⅛-2	2-4½
Weight...........................pounds	4	7¼	15

Armstrong Bros. Standard Pipe Cutters

Saunders Type

Cadmium Finish

ARMSTRONG BROS. CHICAGO

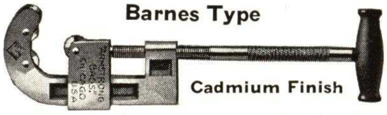
Has one cutter wheel. Two hardened rollers eliminate almost entirely burr raised by cutter wheel.

Body, handle and cutter holder are malleable iron. Pins and rollers are tool steel carefully machined and hardened. Cutter wheel is of special alloy steel, of improved shape, carefully hardened and heat treated.

No.	Complete Each	Pins Each	Rollers Each	Wheels Each	For Pipe In.	Wt. Lbs.
1-S	$3.00	$.10	$.24	$.50	⅛ to 1	3
2-S	4.50	.10	.32	.60	1 to 2	6
3-S	7.50	.15	.50	1.10	2 to 3	11½
4-S	15.00	.15	.50	1.10	2½ to 4	15
5-S	22.50	.15	.50	1.10	4 to 6	23

Armstrong Bros. 3-Wheel Pipe Cutters

Barnes Type



Cadmium Finish

Made especially for use where conditions do not permit revolving entirely around pipe. Has body of malleable iron. Pins are tool steel carefully hardened. Cutter wheels are made from a special alloy tool steel carefully hardened and heat treated.

Parts interchangeable with similar parts of other standard makes.

No.		1-B	2-B	3-B	4-B	5-B
Each		**$4.50**	**$6.00**	**$10.00**	**$20.00**	**$30.00**
Pins	dozen	**1.00**	**1.00**	**1.00**	**2.00**	**2.00**
Wheels	each	**.50**	**.60**	**.80**	**1.00**	**1.10**
For Pipe	inches	1/8–1	1/2–2	1 1/2–3	2 1/2–4	4–6
Weight	pounds	3	5 1/4	8	12	20

Armstrong Bros. Knife Blade Pipe Cutter Wheels

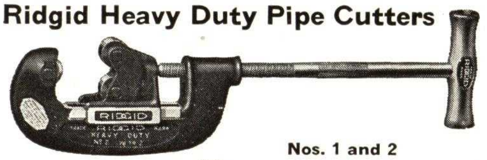
Knurled Edge—Cadmium Finish

Made from selected alloy tool steel accurately machined, heat treated, hardened and oil tempered.

No. 5 wheels for Barnes cutters also fit No. 6 and 7 Barnes cutters.

Type of Pipe Cutter	No. 1 Each	No. 2 Each	No. 3 Each	No. 4 Each	No. 5 Each
Saunders	**$.50**	**$.60**	**$1.10**	**$1.10**	**$1.10**
Barnes	**.50**	**.60**	**.80**	**1.00**	**1.10**
Nye	**.70**	**.80**	....	....	....
Trimo	**.60**	**.60**	**.90**	....	....
Armstrong Bros. 3 Wheel	**.50**	**.60**	**.80**	**1.00**	**1.10**
Armstrong Bros. Standard	**.50**	**.60**	**1.10**	**1.10**	**1.10**
Armstrong Bros. Drop Forged	**.60**	**.60**	**.90**	....	....

Ridgid Heavy Duty Pipe Cutters



Nos. 1 and 2

Nos. 3 and 4

Equipped with either heavy duty cutter wheels or Ridgid patented thin blade wheel; may be made 3 wheel.

No.		1	2	3	4	6
Each		**$4.10**	**5.48**	**9.13**	**18.25**	**27.38**
Capacity	inches	1/8 to 1 1/4	1/8 to 2	1 to 3	2 to 4	4 to 6
Weight	pounds	6	7	14 1/2	18	21 1/4

Cutter Roll Pin

Cutter Roll

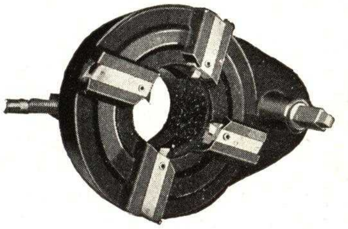
Wheel for Cast Iron Pipe

Heavy Duty Wheel

Thin Wheel

No.		1	2	3	4	6
Thin Wheel	each	**$.44**	**$.44**	**$.67**	**$ .67**	.....
Heavy Duty Wheel	each	**.49**	**.49**	**.74**	**.74**	**$ .88**
Cast Iron Wheel	each	**.37**	**.37**	**.74**	**.74**	**.88**
Frame	each	**1.84**	**3.28**	**.98**	**12.18**	**18.72**
Screw Handle	each	**.68**	**1.36**	**2.74**	**2.74**	**2.74**
Pipe Handle	each	....	....	**.95**	**.95**	**.95**
Roll Housing	each	**1.23**	**1.23**	**1.43**	**4.10**	**5.85**
Roll	each	**.23**	**.23**	**.60**	**.60**	**.60**
Pin and Clip		**.16**	**.16**	**.22**	**.22**	**.22**
Wheel Spacers	each	....	....	....	.....	.....

Toledo Automatic Pipe Cutters



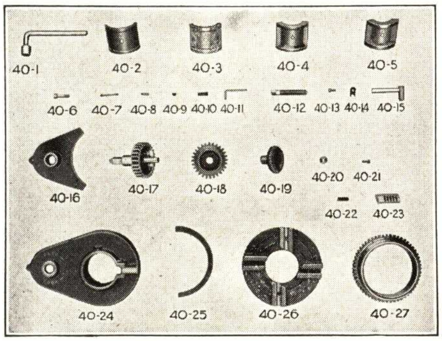
Cutters cut smoothly. Knives are fed automatically. Operated with ratchet handle or Toledo power drive. Outfit consists of tool body, ratchet handle, set-screw wrench, bushings, and extra set of cutter blades.

No. 80 has two sets of cutter blocks.

	No. 40-Cap., 2 to 4-In. Pipe Each	No. 40-Cap., 2 to 4-In. Pipe Ship. Wt. Lb.	No. 80-Cap., 5 to 8-In. Pipe Each	No. 80-Cap., 5 to 8-In. Pipe Ship. Wt. Lb.
Complete Cutter	**$87.00**	86	**$175.00**	189
4 Cutter Blades	***2.80**	1	***3.50**	1
4 Special 45° Beveled Cutter Blades	***5.85**	1	***17.55**	1
4 Special Victaulic Grooving Blades	***4.65**	1	***4.65**	1

*Per set.

Parts for Toledo Automatic Pipe Cutters



Description	No. 40 No.	No. 40 Each	No. 80 No.	No. 80 Each
Jaw Wrench	**40–1**	**$.35**	**80–1**	**$.35**
Bushing	**40–2**(3 1/2″)	**.82**	....	....
Bushing	**40–3**(3″)	**.82**	**80–3**(5″)	**2.93**
Bushing	**40–4**(2 1/2″)	**.82**	**80–4**(6″)	**2.93**
Bushing	**40–5**(2″)	**.82**	....	....
Face Cap Screw	**40–6**	**.23**	**80–6**	**.23**
Back Cap Screw	**40–7**	**.17**	**80–7**	**.17**
Bushing Retaining Screw	**40–8**	**.23**	**80–8**	**.46**
Oil Hole Screw	**40–9**	**.17**	**80–9**	**.35**
Wrench Spring Clip	**40–10**	**.05**	**80–10**	**.10**
Wrench Spring Clip Screw	.....	**.05**	.....	**.05**
Headless Set Screw Wrench	**40–11**	**.23**	**80–11**	**.23**
Jaw Set Screw	**40–12**	**.46**	**80–12**	**.46**
Sliding Post Clip Screw	**40–13**	**.05**	**80–13**	**.05**
Sliding Post Clip	**40–14**	**.05**	**80–14**	**.05**
Jaw and Sliding Post	**40–15**	**1.40**	**80–15**	**1.75**
Top Plate	**40–16**	**1.75**	**80–16**	**2.81**
*Driving Pinion	**40–17**	**15.24**	**80–17**	**15.24**
*Scroll Pinion	**40–18**		**80–18**	
Hand Grip	**40–19**	**2.11**	**80–19**	**2.11**
Hand Grip Retaining Washer	**40–20**	**.05**	**80–20**	**.05**
Hand Wheel Retaining Washer Screw	**40–21**	**.05**	**80–21**	**.05**
†Cutter Blade	**40–22**	**.70**	**80–22**	**.87**
Cutter Blades, per Set of 4	**40–22**	**2.80**	**80–22**	**3.50**
Cutter Block	**40–23**	**1.75**	‡**80–23**	**3.50**
Cutter Block Screw	.....	**.17**	.....	**.23**
Head Case	**40–24**	**14.07**	**80–24**	**35.19**
Head Retaining Ring	**40–25**	**1.17**	**80–25**	**4.69**
Head Retaining Ring Screw	.....	**.05**	.....	**.05**
Head	**40–26**	**16.42**	**80–26**	**37.53**
Scroll	**40–27**	**19.94**	**80–27**	**41.05**

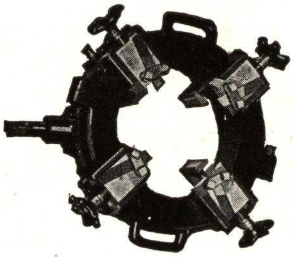
*When one or the other of these parts is required the remaining part must be returned to have new part fitted.

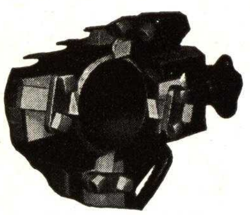
†When single cutter blade is required, remaining blades must be returned to permit proper matching.

‡Specify whether long or short cutter block is required.

When ordering repairs always specify serial number which appears on brass name plate of tool.

Toledo Ratchet Geared Pipe Cutters





With Special 45° Blades

This tool cuts off large pipe quickly and accurately, and leaves a straight, square-end cut without burr.

The chuck jaws are casehardened with micrometer marks; no bushings are necessary. When cutting off pipe while cutter frame is rotating, either by means of the ratchet handle or a Toledo Power Drive, the knives are fed into the pipe by hand; the operator gives the hand feed wheel a part turn at each revolution. The knives are made of high speed steel, carefully tempered and double-ended.

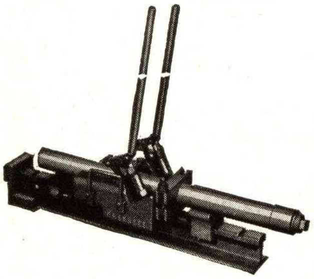
Special cutter blades for cutting a 45° bevel with a narrow shoulder on the end of the pipe can be furnished on special order.

A complete tool consists of the tool body, cutter knives, set-screw wrench and the ratchet handle all packed in a wood box.

No.	Description	Each	Ship. Wt.Lb.
250	Geared Pipe Cutter Comp., 2½ to 6-In Pipe	**$93.00**	122
300	Geared Pipe Cutter Comp., 4½ to 8-In. Pipe	**123.00**	164
350	Geared Pipe Cutter Comp., 7 to 10-In. Pipe	**152.00**	173
400	Geared Pipe Cutter Comp., 9 to 12-In. Pipe	**175.00**	207
...	Cutter Blades........................set of 4	**3.75**	1
...	Special 45° Bevelled Cutter Blades.set of 4	**11.70**	1¼
...	Adapters...........................set of 2	**11.70**	1
...	Long Cutter Clamp Screws.........set of 4	**.93**	1
...	Special Victaulic Grooving Blades...set of 4	**17.55**	1¼

No. 790 Greenlee Hydraulic Pipe Pushers

For underground installation in gas, electric, waterworks, telephone and other fields.



Eliminates tunneling, extensive trenching, backfilling and tamping, tearing up lawns, streets, sidewalks, railroad tracks, repaving.

Hydraulic unit does actual pushing, developing up to 75 tons piston pressure in large model.

One or two men can easily develop pressure needed to push pipe.

Unit is compact and simple to handle. Easy to carry and set up.

For ¾ to 4-inch pipe, inclusive. Has six different operating speeds to match varying soil conditions, with pushing pressures ranging from 6,500 to 40,000 pounds. Greater speed for light soil, sufficient power for difficult soil conditions.

Power unit travels on notched steel base, supplied in 5½, 6½, 7½ and 8½-foot lengths, permitting pushes of from 4 to 7 feet between changes of the pipe clamp. Each base is equipped with one backing plate and two pipe supports.

Weight of power unit only, 160 pounds.

No. **790**, Power Unit Only....................each **$185.00**

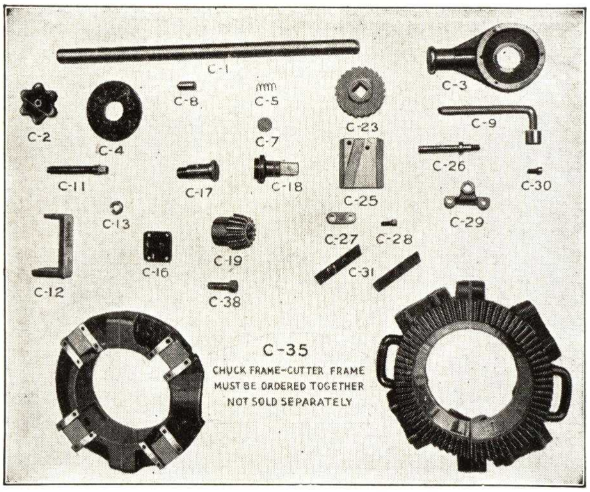
Steel Bases, with Pipe Support and Backing Plate

Length...........feet	5½	6½	7½	8½
Each................	**$30.00**	**35.00**	**40.00**	**45.00**
Weight.......pounds	145	165	185	205

Quick Acting Clamps

Pipe Size..in.	¾	1	1¼	1½	2	2½	3	3½	4
Each...	**$10.00**	**10.00**	**10.00**	**10.75**	**11.50**	**12.75**	**15.00**	**17.50**	**22.50**

Parts for Toledo Ratchet Geared Pipe Cutters



Description	No. 250		No. 300	
	No.	Each	No.	Each
Ratchet Handle Complete.....	....	**$4.10**	.....	**$5.27**
Handle.....................	C-1	**1.17**	300-1	**1.46**
Hand Grip..................	C-2	**.58**	300-2	**.58**
Ratchet Case...............	C-3	**1.75**	300-3	**2.05**
Ratchet Cover..............	C-4	**.58**	300-4	**.58**
Ratchet Spring.............	C-5	**.10**	300-5	**.10**
Ratchet Spring Disc........	C-7	**.05**	300-7	**.05**
Ratchet Pawl...............	C-8	**.35**	300-8	**.35**
Set Screw Wrench...........	C-9	**.35**	300-9	**.35**
Ratchet Cover Screw........	....	**.05**	......	**.05**
Set Screw..................	C-11	**.46**	300-11	**.46**
Chuck Jaw..................	C-12	**5.27**	300-12	**5.27**
Set Screw Collar...........	C-13	**.23**	300-13	**.23**
Jaw-Plate Screw............	....	**.10**	......	**.10**
Jaw-Plate..................	C-16	**.58**	300-16	**.58**
Pinion Stud................	C-17	**2.34**	300-17	**2.34**
Pinion Shank...............	C-18	**1.17**	300-18	**1.17**
Pinion.....................	C-19	**4.69**	300-19	**4.69**
Ratchet Wheel..............	C-23	**.87**	300-23	**.87**
Cutter Block...............	C-25	**5.27**	300-25	**5.27**
Knife-Feed Screw...........	C-26	**1.17**	300-26	**1.17**
Cutter Clamp...............	C-27	**.35**	300-27	**.35**
Cutter Clamp Screw.........	C-28	**.23**	300-28	**.23**
Feed Screw Bracket.........	C-29	**.93**	300-29	**.93**
Feed Screw Bracket Screw....	C-30	**.23**	300-30	**.23**
*Cutter Blade..............	C-31	**.94**	300-31	**.94**
†Chuck Frame..............	C-35	**38.70**	300-35	**66.86**
†Cutter Frame..............				
Frame Clamping Screw.......	C-38	**.35**	300-38	**.35**

Description	No. 350		No. 400	
	No.	Each	No.	Each
Ratchet Handle Complete....	.....	**$5.27**	.....	**$5.27**
Handle.....................	350-1	**1.46**	400-1	**1.46**
Hand Grip..................	350-2	**.58**	400-2	**.58**
Ratchet Case...............	350-3	**2.05**	400-3	**2.05**
Ratchet Cover..............	350-4	**.58**	400-4	**.58**
Ratchet Spring.............	350-5	**.10**	400-5	**.10**
Ratchet Spring Disc........	350-7	**.05**	400-7	**.05**
Ratchet Pawl...............	350-8	**.35**	400-8	**.35**
Set Screw Wrench...........	350-9	**.35**	400-9	**.35**
Ratchet Cover Screw........	......	**.05**	......	**.05**
Set Screw..................	350-11	**.46**	400-11	**.46**
Chuck Jaw..................	350-12	**5.27**	400-12	**5.27**
Set Screw Collar...........	350-13	**.23**	400-13	**.23**
Jaw-Plate Screw............	......	**.10**	......	**.10**
Jaw-Plate..................	350-16	**.58**	400-16	**.58**
Pinion Stud................	350-17	**2.34**	400-17	**2.34**
Pinion Shank...............	350-18	**1.17**	400-18	**1.17**
Pinion.....................	350-19	**5.86**	400-19	**5.86**
Ratchet Wheel..............	350-23	**.87**	400-23	**.87**
Cutter Block...............	350-25	**5.27**	400-25	**5.27**
Knife-Feed Screw...........	350-26	**1.17**	400-26	**1.17**
Cutter Clamp...............	350-27	**.35**	400-27	**.35**
Cutter Clamp Screw.........	350-28	**.23**	400-28	**.23**
Feed Screw Bracket.........	350-29	**.93**	400-29	**.93**
Feed Screw Bracket Screw....	350-30	**.23**	400-30	**.23**
*Cutter Blade..............	350-31	**.94**	400-31	**.94**
†Chuck Frame..............	350-35	**90.32**	400-35	**113.78**
†Cutter Frame..............				
Frame Clamping Screw...each	350-38	**.35**	400-38	**.35**

*When ordering single cutter blades, always specify whether straight or bevel edge required. A complete set must comprise 2 straight and 2 bevel edge blades.

†When chuck or cutter frames are required, it is necessary to ship the cutter to factory to have these parts properly fitted.

When ordering parts, always specify part number as well as the serial number of the cutter, which appears on the brass name plate of the tool.

Butterfield Burring Reamers

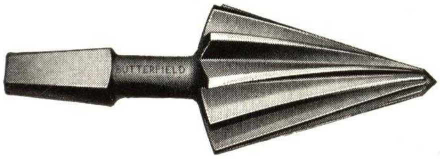
Tool steel burring reamers designed for removing burrs, caused by cutting pipe. Used extensively for countersinking and for enlarging holes in sheet steel, iron, copper, brass, etc.

No. 4111—Straight Fluted

BUTTERFIELD

No.	Each	Style of Shank	Capacity Pipe Inches	Diameter, Inches Large End	Diameter, Inches Small End
3	**$1.25**	Bit Brace	½ to 1	1¼	7/16
4	**1.25**	½″ Round	½ to 1	1¼	7/16
33	**1.50**	Bit Brace	⅛ to 1¼	1½	⅛
333	**1.50**	½″ Round	⅛ to 1¼	1½	⅛
5	**3.00**	Bit Brace	1¼ to 2	2⅛	1 3/16
55	**3.00**	½″ Round	1¼ to 2	2⅛	1 3/16

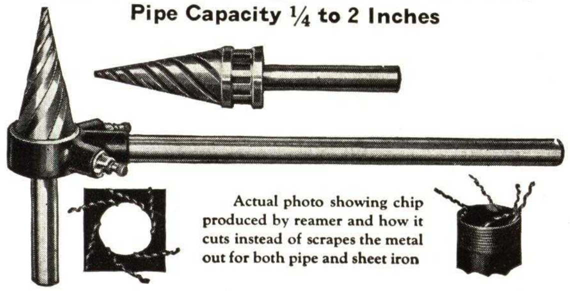
No. 4112—Spiral Fluted



No.	Each	Style of Shank	Capacity Pipe Inches	Diameter, Inches Large End	Diameter, Inches Small End
6	**$1.50**	Bit Brace	⅛ to 1¼	1½	⅛
7	**3.00**	Bit Brace	¼ to 2	2⅛	¼

Reed Self-Feeding Ratchet Reamers

Pipe Capacity ¼ to 2 Inches



Actual photo showing chip produced by reamer and how it cuts instead of scrapes the metal out for both pipe and sheet iron

No.	*2-71	†2-72
Complete . . . . each	**$10.00**	**$11.00**
Cone, Handle and Head, Complete . . . . each	**6.75**	**7.25**
Cone Only . . . . each	**5.00**	**5.00**

Used with Reed ratchets series *71 and 81, †72 and 82.

Armstrong Bros. Ratchet Pipe Reamers

ARMSTRONG BROS. CH

A high grade general service ratchet reamer, for removing burrs caused by cutting pipe. The ratchet is drop forged of steel, while the spindle, gear, nut and reversing jigger are machined from steel and hardened throughout. The handle is standard ½-inch pipe, polished, and is removable. Bit brace style shank; ball bearing action. Reamers of spiral fluted design and drop forged of high grade tool steel, milled, ground and hardened. Cadmium finish. Each ratchet and reamer is boxed separately.

Price includes ratchet and 1 reamer of listed capacity.

Cap. Pipe In.	Complete No.	Complete Each	Complete Wt. Lb.	Extra Ratchets Each	Extra Reamers No.	Extra Reamers Each	Extra Reamers Wt. Lb.	Extreme Lgth. In.
⅛-1	**122**	**$8.75**	4½	**$7.50**	**42**	**$1.25**	¼	18
¼-1¼	**122½**	**9.00**	4¾	**7.50**	**42½**	**1.50**	½	18
¼-2	**124**	**10.50**	5½	**7.50**	**44**	**3.00**	1¼	18

Ridgid LonGrip Pipe Reamers

No. 00-R Ratchet Handle

RIDGID
RIDGID
RIDGID LonGrip REAMER

At Top, Reamer Unit
At Bottom, Reamer and Ratchet Handle

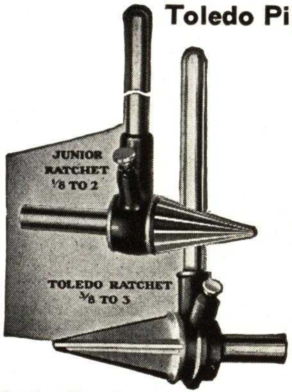
Because of its long taper design, this reamer cuts burrs, cleanly from the inside of pipe or conduit with practically no pressure. Does not reduce wall of threading end nor flare or split pipe.

Furnished complete with ratchet handle. Reamer unit may be purchased separately for use in No. 00-R small ratchet die handle. Reamer capacity, ⅛ to 2 inches.

Ratchet handle can be used with reamer unit shown as well as with No. 00-R die heads.

Reamer Complete	each	**$7.02**
Reamer Unit Only	each	**5.27**
Reamer Cone Only	each	**3.51**
No. 00-R, Ratchet Handle	each	**2.34**

Toledo Pipe Reamers



Small, compact, easy to operate. Feeds easily with only a slight pressure. Cuts rapidly, leaving a smooth, clean cut.

Junior Ratchet Reamer is all steel with multiple tooth head of one-piece, special heat-treated steel. Especially adapted for plumbers and electricians. Capacity, ⅛ to 2-inch pipe.

Ratchet Reamer has ***high speed*** steel cutter blades cast solidly in the head. Capacity, ⅜ to 3-inch pipe.

Junior Ratchet; Weight, 5 Pounds	each	**$7.00**
Ratchet; Weight, 8 Pounds	each	***8.20***

Morgan Machinists' Vises

Solid Jaw Stationary Base

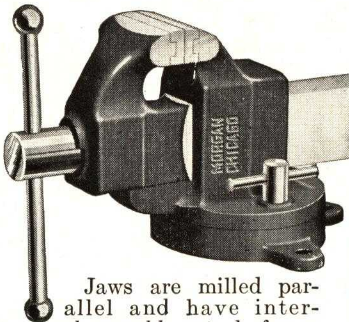
MORGAN CHICAGO

No.	Each	Width Jaw, In.	Jaws Open, In.	Wt. Lb.
30	**$10.00**	3	4	23
35	**11.25**	3½	5	31
40	**12.75**	4	5½	43
45	**15.50**	4½	6¼	56
50	**20.00**	5	7	74
55	**30.00**	5½	8½	102
60	**39.00**	6	9½	138
70	**55.00**	7	12	200
80	**75.00**	8	12	250

Jaws are milled parallel and have interchangeable tool steel faces, which may be renewed when battered or worn. All parts interchangeable.

Morgan Machinists' Vises

Solid Jaw
Swivel Base

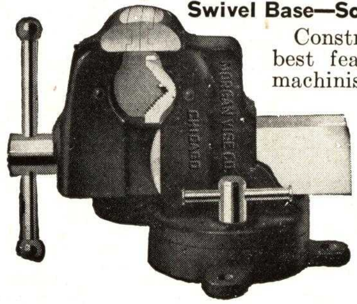


No.	Each	Width Jaw, In.	Jaws Open, In.	Wt., Lb.
130	$13.00	3	4	32
135	15.00	3½	5	44
140	17.00	4	5½	57
145	20.00	4½	6¼	70
150	30.00	5	7	95
155	38.00	5½	8½	120
160	52.00	6	9½	150
170	70.00	7	12	220

Jaws are milled parallel and have interchangeable steel faces, which may be renewed when worn. All parts are interchangeable.

Morgan Combination Pipe Vises

Swivel Base—Solid Jaw



Constructed to embody the best features of the standard machinists' vise and the convenience of a pipe vise.

Pipe jaws are milled from a high grade tool steel and the vise jaws have hardened tool steel faces.

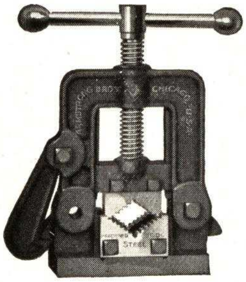
All parts are interchangeable.

No.	87	88	288½	289½
Each	$17.50	24.00	38.00	60.00
Width of Jaw..........inches	3½	4½	5	6
Pipe Capacity.........inches	2	3	4	6
Weight..... ....pounds	48	72	120	185

Armstrong Bros. Standard Pipe Vises

An automatic locking vise which combines convenient weight with strength and quick action.

Frame and base made of certified malleable iron. Jaws of tool steel, carefully milled, hardened, tempered and tested. Cadmium finish.

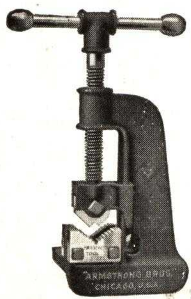


No.	Each	Extra Jaws per Set of 3	Capacity Pipe Inches	Wt. Lb.
7000	$2.50	$1.20	⅛–1¼	3
700	3.60	1.40	⅛–1½	5
*70	4.25	1.75	⅛–2	7½
*71	5.00	1.75	⅛–2½	10
72	7.50	2.50	⅛–3½	16
73	11.00	3.50	⅛–4½	25
74	23.50	6.00	⅛–6	49
75	47.50	8.55	1 –8	81

*Furnished with full length jaws.

No. 10 Armstrong Bros. Open Side Pipe Vises

Cadmium Finish



This vise has strength, quick action, convenience of operation and solid gripping power. Body is certified malleable iron; screw and handle are steel. Jaws are of tool steel with milled teeth and are carefully heat treated, oil tempered and tested.

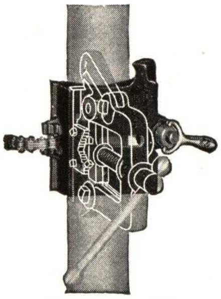
By means of the chain attachment the vise can be fastened to any post, pole, etc. Chain passes through body of vise. Furnished with chain attachment unless otherwise specified.

No.	Complete	Vise Only	Chain Only	Extra Jaws Set of 3	Holds Pipe Size, In.	Wt. Lbs.
10	$9.50	$6.00	$3.50	$1.75	⅛ to 2	12¾

No. 50 Armstrong Bros. Pipe Vise Saddles

Cadmium Finish

This is a portable base for standard pipe vises that attaches to round or square posts.



The body is certified malleable iron and it is slotted to hold rigidly all standard make vises in popular styles and sizes.

The tightening handle is drop forged and has a hardened steel nut. The flat link chain is proof-tested. Standard chain is 27 inches long; extra length can be furnished on specification.

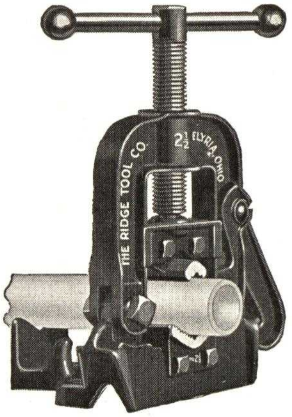
Furnished complete with bolts, nuts, and washers for attaching vises.

Packed in a wooden box.

Weight, 12 pounds.

No. 50..................each **$6.00**

Ridgid Yoke Bench Vises



Capacity, ⅛ to 6 inches.

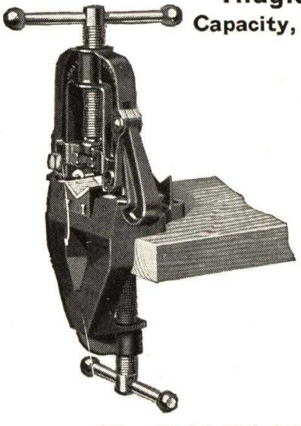
Unusually handy and efficient. Convenient pipe rests and benders.

Strong special malleable frames; highest quality No-Mar tool steel jaws.

No.	Each	Max. Cap. In.	Ship. Wt. Lb.
B-Y-1¼″	$2.52	1¼	3½
B-Y-2″	4 73	2	11½
B-Y-2½″	5.56	2½	12
B-Y-3″	7.24	3	16
B-Y-3½″	8.34	3½	17
B-Y-4″	10.02	4	24
B-Y-4½-5″	11.58	5	30
B-Y-6″	26.16	6	50½

Ridgid Kit Vises

Capacity, ⅛ to 2½ Inches



Handy portable yoke bench vise. Easily attached to plank or work bench.

Strong special malleable frame. LonGrip jaws, made of finest quality tool steel, are furnished to protect polished pipe.

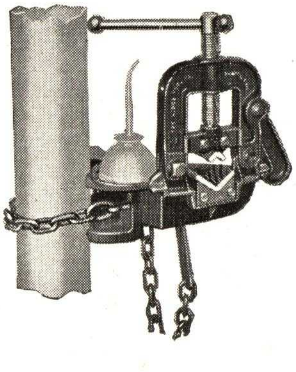
Integral pipe rest and pipe bender.

Vise screw clamp for bench up to 4 inches thick.

No.	Each	Capacity Inches	Wt. Lb.
K-Y-1¼	$4.10	⅛ to 1¼	5½
K-Y-2	5.85	⅛ to 2	17½
K-Y-2½	7.61	⅛ to 2½	18½

No. P-Y-2½ Ridgid Post Vises

Capacity, ⅛ to 2½ Inches



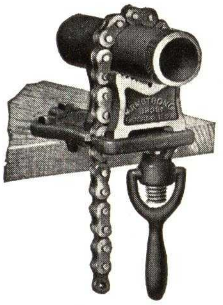
Strong, special malleable metal frame. Hardened tool steel jaws.

No-Mar jaws. Handy pipe rest and pipe bender. Attached quickly to any post.

Chain and wrench fastened to vise. Handy dope pot and oil can holder.

Weight, 21½ pounds.

No. P-Y-2½...each **$10.00**



Armstrong Bros. Chain Pipe Vises

Cadmium Finish

Especially adapted for use on outside jobs.

Made of drop forged steel with hardened jaws.

Maximum strength and capacity are combined in this vise with minimum weight. Convenient for carrying in tool bag or chest and can be easily attached to post or bench.

Screws will be sent with chains unless chain only is specified.

No.	Holds Pipe, In.	Wt. Lbs.	Each	Jaws per Pr.	Chain with Screw	Screw Only	Handle with Nut	Nut Only
1-C	⅛–2	4½	$7.00	$3.00	$2.50	$.80	$2.20	$1.40
2-C	¼–4	12½	15.00	7.00	4.80	1.40	4.20	2.70
3-C	¼–6	18	27.00	12.00	9.00	2.50	7.00	4.00
4-C	¼–8	30	36.00	18.00	12.00	2.50	7.00	4.00

Williams' Vulcan Drop-Forged Chain Pipe Vises

An unbreakable vise made entirely of wrought steel with drop-forged jaws, base, and handle. Jaws are saw tempered for file sharpening.

For fastening to bench or post.

Jaws have bright face around panel.

Packed in individual boxes; 6 of size Nos. 1 and 2 in a carton.

No.	Complete Each	Jaws per Pr.	Chain with Screw Each	Screw Each	Handle with Nut Each	Nut Each	Capacity Pipe Inches	Approx. Size Folded Inches	Approx. Wt. Lb.
1	$7.00	$3.00	$2.50	$.80	$2.20	$1.40	*⅛–2	4x 5x 6	4
2	15.00	7.00	4.80	1.40	4.20	2.70	¼–4	6x 8x 8	10
3	27.00	12.00	9.00	2.50	7.00	4.00	½–6	8x 9x11	18
4	36.00	18.00	12.00	2.50	7.00	4.00	½–8	8x10x12	30

*Will grip pipe fittings not larger in diam. than 2½-in. pipe.

Williams' Vulcan Superior Chain Pipe Vises

Drop-Forged Reversible Jaws

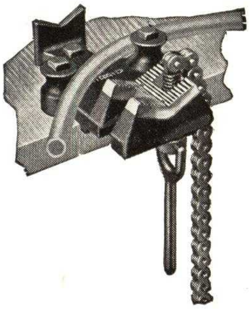
Handle is on top where it is easy to operate. Jaws are reversible—unscrew bolts and turn jaws over when teeth wear. Wrought steel.

Shot-blasted finish, orange panel in jaw.

No.	Each	Jaws per Pr.	Chain Each	Screw Each	Hdle. & Screw Each	Chain Arm Each	For Pipe Size Inches	Wt. Lb.
11	$10.00	$3.30	$2.00	$1.00	$2.35	$1.20	⅛–2½	7
12	19.00	7.70	3.60	1.45	3.50	1.85	¼–4½	15

Ridgid Chain Bench Vises

Capacity, ⅛ to 8 Inches



Special malleable frame, jaws of high quality tool steel.

Has pipe rest and bender.

No.	Each	Cap. In.	Bending Cap. In.	Ship. Wt. Lb.
BC-2	$4.10	⅛–2½	1	5½
BC-4	8.78	¼–4	1	13½
BC-5	11.70	¼–5	1	12
BC-6	15.80	½–6	1	20¼
BC-8	21.06	½–8	1¼	33¼

Ridgid Pipe Vise Tri-Stands

Yoke Type

A wide, roomy stand for dope pot, oil can, and tools; balanced to prevent tipping. Has special rim and slots for hanging tools; adjustable ceiling brace.

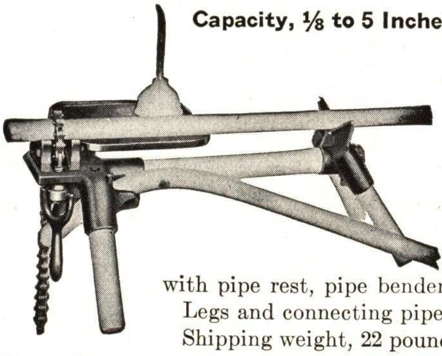
Pipe rest, three benders that will not collapse pipe. Legs furnished hinged at tray so they fold in and chain for easy carrying; screw-down feet.

Special malleable metal frame; tool steel jaws, hardened for firm grip and long wear.

		Yoke Type Capacity, ⅛″–2½″	Chain Type Capacity, ¼″–4″
No.		TSY-2½	TSC-4
Complete	each	$16.10	$18.11
Base	each	11.33	11.33
Chain Screw	each	.....	.82
Chain Screw Handle	each	.....	.42
Chain Screw Nut	each	.....	.82
Top or Bottom Screw Assembly	each	1.37	....
Yoke and Hook Assembly	each	1.72	....
Clamps (2)	per pair	.42	....
Upper Jaw	each	.59	....
Lower Jaw	each	.91	2.43
Jaw Bolts	per set	.14	.07
Link Chain	each	.....	3.83
Jack Screw Assembly	each	1.08	1.08
Shipping Weight, Complete	pounds	48	45

No. S-C-5 Ridgid Chain Vise Stands

Capacity, ⅛ to 5 Inches



Handy portable chain vise stand.

Sturdy malleable iron frame.

High quality tool steel jaws.

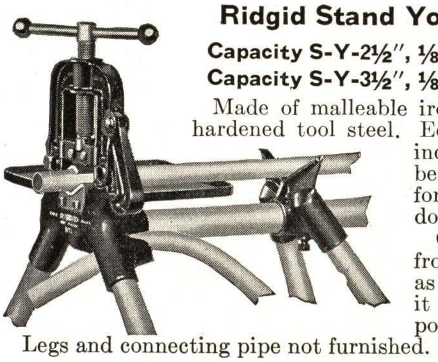
Equipped with pipe rest, pipe bender, and tool tray. Legs and connecting pipes not furnished. Shipping weight, 22 pounds.

No. S-C-5..each **$13.90**

Ridgid Stand Yoke Vises

Capacity S-Y-2½″, ⅛ to 2½ Inches

Capacity S-Y-3½″, ⅛ to 3½ Inches



Made of malleable iron with jaws of hardened tool steel. Equipped with 1-inch capacity pipe bender. With tray for holding oil can, dope pot and tools.

Can be carried from place to place as with 4-foot legs it weighs only 50 pounds.

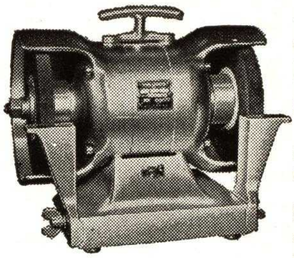
Legs and connecting pipe not furnished.

No.		S-Y-2½″	S-Y-3½″
Each		$11.13	13.35
Shipping Weight	pounds	23½	28

Black & Decker 6-Inch Junior Electric Grinders

Bench Type—Ball Bearing

⅕-Hp. Motor, 25 Cy.—¼-Hp. Motor, 40, 50 or 60 Cy.
All Voltages—Single Phase—A.C.



For practical shop use. Rotor and wheel spindle mounted on full-size bearings; special protective sleeves covering these guards. Guards are cast integral with motor housings.

Tool rests are locked in base grooves with wing nuts, and adjusted for wheel wear.

Overall spindle length, 12¼-inches; overall height, 10 inches; height to center line of spindle, 5½ inches.

Standard equipment includes 3-conductor cable and plug, toggle switch in base, carrying handle, 4 rubber feet, 2 wheel guards, 2 tool rests, 1 medium grinding wheel, and 1 wire wheel brush.

Shipping weight, 34 pounds.

Cycles	25	40	50	60
Each	$27.00	27.00	27.00	27.00
No-Load Speed . . . rpm.	1500	2400	3000	3600

6-Inch Heavy Duty Black & Decker Electric Grinders

Bench Type

⅓-Hp., Motor, A.C.—For 60 Cycles, 3600 RPM.

Extended wheel spindle and tapered end-housings increase the wheel clearance for grinding large and odd-shaped pieces. Wheel guards are enclosed and equipped with adjustable tool rests. Guards are adjustable radially, and are drilled and tapped for eyeshields at slight extra charge. Grease-sealed ball bearings near ends of spindle. Tool rests are adjustable for wheel wear.

Overall spindle length, 15 inches; total height, 11 inches; height to center line of spindle, 6¼ inches. Wheel size, 6x¾x½ inches.

Standard equipment includes 3-conductor cable and plug; toggle switch in base; carrying handle; rubber feet; two enclosed wheel guards wide enough to accommodate wire wheel brushes with adjustable tool rests; two 6-inch grinding wheels, one medium and one fine.

Shipping weight, 48 pounds.

Cat. No. **67**, 1-Ph.; 50–60 Cy., 110 or 220 V. . . . . . each **$45.00**
Cat. No. **68**, D.C. Up To and Incl. 250 Volts. . . each **50.00**
For No. **30700** Pedestal with Water Pot, Add. . . each **22.00**

The grinder supplied for d.c. does not have enclosed guards and extended housings, and is otherwise different in appearance.

Black & Decker Electric Tools

We carry a well assorted stock of Electric Drills, Grinders, etc.

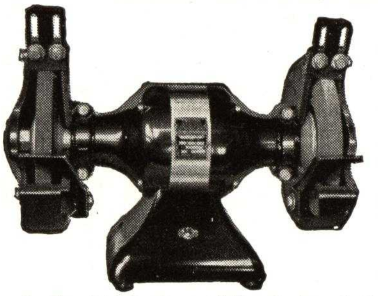
Write us about any items in which you are interested.

Black & Decker 8-Inch Electric Grinders

Bench Type—Ball Bearing

½-Hp. Motor—60 Cycles, A.C.—3600 RPM.

Especially adapted to polishing, buffing and wire brushing operations. Constant speed type motor provides abundant power.



Wheel guards are fully enclosed and equipped with tool rests and spark shields. Guards are drilled and tapped for eyeshields, at slight extra charge. Full size ball bearings.

Overall spindle length, 17¾ inches; total height, 12 inches; height to center line spindle, 7¼ inches. Wheel size, 8x⅞x⅝ inches.

Standard equipment includes 3-conductor cable and plug, lead wire for permanent connection (except on 2 and 3-phase units); toggle switch in base, carrying handle; rubber feet; two enclosed wheel guards with adjustable tool rests and spark shield; two 8-inch grinding wheels, one medium, and one fine.

Shipping weight, 82 pounds.

1-Phase; 110, 220 or 250 V. (Cat. No. 74). . . . . each **$80.00**
2-Phase; 110, 220, 250, 440, 550 V. (Cat. No. 75). ea. **80.00**
3-Phase; 110, 220, 250, 440, 500, 550V. (Cat. No. 76) ea. **80.00**

Also furnished 40 or 50 cycles, 1, 2, or 3-phase; or 25 cycles, 1 or 3-phase at same price. The 3-phase, 110–220 and 220–440-volt units are reconnectable for either voltage.

For No. **30700** Pedestal with Water Pot, add. . each **$22.00**

8-Inch Combination Ball-Bearing Grinder

Equipped with one 8-inch wire wheel brush and extra-wide enclosed guard without tool rest or spark shield; one 8-inch medium grinding wheel with standard guard, tool rest, and spark shield. Other specifications as above.

A. C., Only, All Available Currents. . . . . each **$85.00**

Black & Decker 10-Inch Electric Grinders

Bench Type—Ball Bearing

¾-Hp. Motor, 25 Cy.—1 Hp. Motor, 40 or 50–60 Cy.
110, 220 or 250 V., 1, 2 or 3-Ph.—440 or 550 V., 2 or 3-Ph.—A.C.
110 or 220 Volts—D.C.

Constant speed motor. Wire leads are brought out for permanent wiring with housing drilled and tapped for conduit and connector furnished for armored cable. Grounding is accomplished through conduit or armored cable cover.

Standard equipment: lead wires, toggle switch in base; 2 enclosed guards with exhaust outlets, tool rests and spark shields mounted on guards, two 10-inch grinding wheels, 1 medium, 1 coarse.

Overall spindle length, 22¾ inches; total height, 15¼ inches; height to center-line spindle, 9½ inches. Wheel size, 10x1x¾ inches. Shipping weight, 153 pounds.

Cycles		25	40	50–60	D.C.
Cat. No.:	1 Phase	78	80	83	. .
	2 Phase	. .	81	84	77
	3 Phase	79	82	85	. .
No Load Speed . . . rpm.		1500	2400	1500, 1800	2000

For All Available Voltages and Cycles. . . . . each **$115.00**
No. **30835**, Pedestal with Water Pot, Add. . . . . . each **28.00**

10-Inch Combination Bench Grinders

Equipped with one 10-inch medium grinding wheel, standard guard, tool rest and spark shield, one 10-inch wire wheel brush, extra-wide enclosed guard, without tool rest or spark shield. Other specifications as above.

For All Available Voltages and Cycles. . . . . each **$121.00**

Three-phase, 110/220 and 220/440 volt units are reconnectable for either voltage. All d.c. units, 1 and 2-phase units and 250 and 550-volt 3-phase are for one voltage only.

No. 258 18-Gage Black & Decker Portable Electric Porto-Shears

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts

Will cut all types of sheet metal quickly. Will cut on a radius as small as ¾-inch and easily follows a straight or curved, irregular line.

Unit is full ball bearing equipped, except eccentric.

Strokes per minute: no load, 2500; full load, 1500.

Overall length, 9⅛ inches.

Standard equipment: 3-wire cable and plug, thumb control switch, one set shear blade, and set-screw wrench.

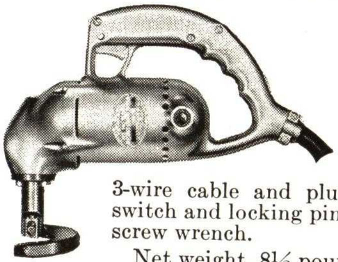
Net weight, 5½ pounds; shipping weight, 8 pounds.

Cat. No. **258**, Specify Voltage.................. each **$68.00**

No. 259 16-Gage Black & Decker Portable Electric Porto-Shears

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts

Will cut all types of sheet metal quickly. Will cut on a radius as small as ¾-inch and easily follows a straight or curved, irregular line.



Unit is full ball bearing equipped, except eccentric.

Strokes per minute: no load, 2500; full load, 1500. Overall length, 12⅛ in.

Standard equipment: 3-wire cable and plug, instant-release trigger switch and locking pin, set shear blade, and set-screw wrench.

Net weight, 8½ pounds; shipping wt., 10½ lb.

Cat. No.**259**, Specify Voltage.................. each **$78.00**

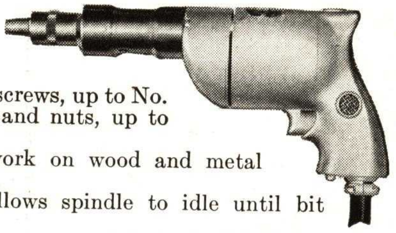
Black & Decker Grinding Wheels

Unit	No.	Each	Dimen., Inches			Grade
			Diam.	Face	Hole	
6″ Junior Bench Grinder (A)	**18124**	**$1.70**	6	⅝	½	Fine 60K
	18125	**1.70**	6	⅝	½	Med. 36G
6″ H.D. Bench Grinder (B & C)	**15315**	**1.95**	6	¾	½	Med. 36G
	15314	**1.95**	6	¾	½	Fine 60K
6″ Bench Grinder (Ball Bearing) (A)	**5183**	**2.30**	6	¾	½	Fine 60K
	13950	**2.30**	6	†¾	½	Med. 36G
7″ Bench Grinder (Type B)	**14235**	**2.90**	7	1	⅝	Fine 60K
	14236	**2.90**	7	1	⅝	Med. 36G
8″ Bench Grinder (Model A)	**18061**	**4.90**	8	⅞	⅝	Med. 36K
	18062	**4.90**	8	⅞	⅝	Fine 60M
10″ Bench Grinder (All Types)	**10275**	**7.35**	10	1	¾	Med. 40K
	10274	**7.35**	10	1	¾	Coarse 24H
Die Grinders* Portable Grinders	**20330**	**1.15**	2	½	½	36-598E
	20329	**1.30**	2½	½	½	36-598E
	24317	**1.45**	3	½	⅜	36-598E
4″ Portable Grinder	**6772**	**1.20**	4	¾	½	Med. 36G
5″ Portable Grinder	**3042**	**1.70**	5	¾	½	Med. 36G
6″ Portable Grinder	**3148**	**2.25**	6	1	⅝	Med. 36G
7″ Jr. Sander	**10663**	**1.95**	4	‡¾	½	Med. 36H
7″ Special Sander	**24050**	**5.50**	4	§1	⅝	163-9-K4
7″ H.D. Sander	**23444**	**6.90**	5	§1¼	⅝	163-9-K4
9″ H.D. Sander	**18039**	**8.35**	6	§1¼	⅝	163-9-K4
½″ Refacer (Types A to EF)	**10495**	**1.10**	3	½	½	Hard Valves
	7923	**1.10**	3	½	½	Soft Valves
	8605	**1.20**	3	*½	½	40K
⅝″ Refacer	**11196**	**1.80**	4	½	¾	Hard Valves
	11197	**1.80**	4	½	¾	Soft Valves
Super-Service Refacer	**VR533**	**2.70**	4	*½	⅝	Hard Valves
	16371	**2.45**	4	*½	⅝	Stellite 90°
	19897	**2.70**	4	†½	⅝	Valves
	22813	**2.70**	4	*½	⅝	Fine 80P
Micrometer and Rocker Arm Att.	**20939**	**2.40**	4	‡¾	½	36R
¼″ Drill	**21463**	**.70**	3	½	½	40L

*Offset. †Recessed. ‡Cup. §Saucer—11 thread bushing.

Black & Decker Portable Electric Scruguns

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts



Capacity: Wood screws for positive type only, up to No. 10x2 inches; self-tapping screws, up to No. 12; machine screws and nuts, up to ¼-inch diameter.

For production work on wood and metal assembly operations.

Positive clutch allows spindle to idle until bit finds screw slot.

Adjustable clutch cushions torque and relieves operator of any twisting motion in driver as screw is driven home. Free spindle idles until operating pressure is applied.

No-load speed, 750 rpm. Spindle offset, ¾-inch.

Standard equipment: 3-conductor cable and plug; 2-pole automatic-release switch and locking pin; No. 13207 bit with protector sleeve, centering sleeve and spring sleeve.

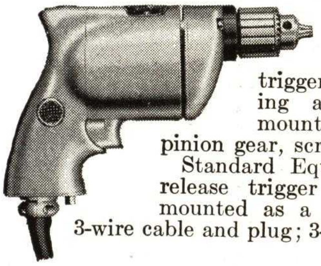
	Positive	**Adjustable**
Cat. No.	**402**	**350**
Specify Voltage.......... each	**$47.00**	**57.00**
Overall Length Including Bit....... inches	8¾	10¼
Net Weight.......... pounds	3½	3¾
Shipping Weight.......... pounds	4¾	5¼

Optional speeds, 500, 1000 or 1500 rpm., no extra cost.

Black & Decker ¼-Inch Portable Electric Holguns

Standard—Ball Bearing

Universal Motor, A.C. and D.C.—For 110, 220 or 250 Volts



Capacity in steel, ¼-inch.

Has pistol grip and trigger switch, new spindle bearing and splined spindle gear mounting, ball-bearings, 12-tooth pinion gear, screened ventilating inlets.

Standard Equipment: 2-pole automatic release trigger switch and locking pin mounted as a unit with cord protector. 3-wire cable and plug; 3-way Jacobs chuck and key.

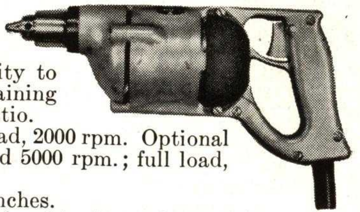
	Standard Speed	**Low Speed**
Complete, Specify Voltage............ each	**$32.50**	**38.00**
Cat. No.	345	346
No-Load Speed.......... rpm.	*1700	†500
Length Overall.......... inches	6¾	7⅛
Spindle Offset.......... inches	¾	¾
Net Weight.......... pounds	3	3¼

Optional speeds, no extra cost: *2500, 3500 or 5000 rpm.; †750 or 1000 rpm.

No. 31 ¼-Inch Standard Duty Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 32, 110, 220, or 250 Volts

Capacity: in steel, ¼ inch. Chuck spindle bearing is double grease sealed with inner and outer races locked.



Supplied in die-cast aluminum alloy housings. This feature adds strength and ability to stand abuse, while retaining light weight-to-power ratio.

Standard speed: no load, 2000 rpm. Optional no load speeds, 3500 and 5000 rpm.; full load, 1100 rpm.

Overall length, 12 7/16 inches.

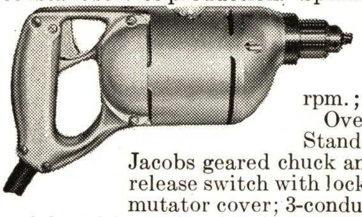
Net weight, 5¼ pounds; shipping weight, 7¼ pounds.

Cat. No. **31**, Specify Voltage.................. each **$38.00**

Equipped with No. 24322 Chuck Protector add $1.00.

¼-Inch Heavy Duty Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts

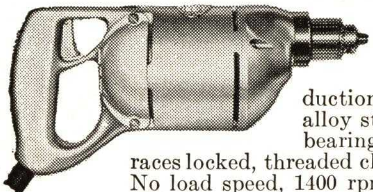


Capacity: in steel, ¼ inch; in hardwood, ½ inch. For constant service production. Spindle gear is spline mounted and spindle has inner and outer races locked in place. Ball bearing. No load speed, 2000 rpm.; full load 1280 rpm. Overall length, 12¼ inches. Standard equipment: 3-jaw Jacobs geared chuck and key; 2-pole automatic release switch with locking pin; removable commutator cover; 3-conductor cable and plug. Net weight, 6¾ pounds; shipping weight, 9½ pounds.

Cat. No. **32**, Specify Voltage....................each **$45.00**
Cat. No. **386**, with Portomatic Keyless Chuck
and Gear Locking Pin..............................each **48.00**

5/16-Inch Heavy Duty Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts



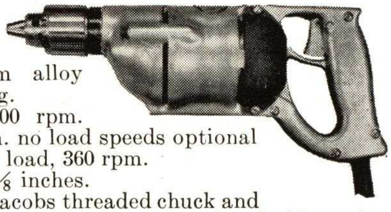
Capacity: in steel, 5/16 inch; in hardwood, ⅝ inch. For continuous production work. Has hardened alloy steel gears, ball spindle bearing with inner and outer races locked, threaded chuck and trigger guard. No load speed, 1400 rpm., full load, 920 rpm. (Special speed, 1000 rpm., $2.50 extra.) Overall length, 12⅜ inches. Standard equipment: 3-conductor cable and plug, 3-jaw Jacobs chuck, automatic release switch and locking pin, and grip handle.

Shipping weight, 9¾ pounds.

Cat. No. **360**, with Geared Chuck and Key.....each **$48.00**
Cat. No. **387**, with Portomatic Keyless Chuck and
Patented Gear Locking Pin....................each **51.00**

No. 490 ⅜-Inch Standard Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts



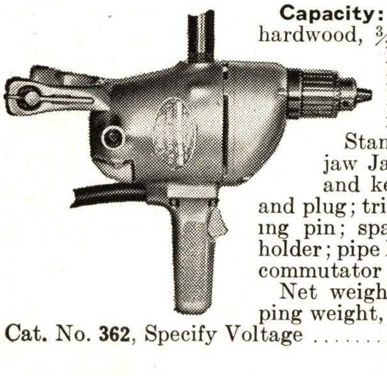
Capacity in steel, ⅜-inch; in hardwood, ⅝-inch. Die-cast aluminum alloy housing. Ball bearing. No load speed, 700 rpm. (350, 500, or 1100 rpm. no load speeds optional at no extra cost); full load, 360 rpm. Overall length, 13⅝ inches. Equipment: 3-jaw Jacobs threaded chuck and key; automatic-release trigger switch with locking pin; 3-wire cable and plug.

Net weight, 6⅛ pounds; shipping weight, 8¼ pounds.

Cat. No. **490**, Specify Voltage....................each **$45.00**
Available with 5/16-inch geared chuck at no extra cost.

No. 362 ⅜-Inch Heavy Duty Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110, 220 or 250 Volts



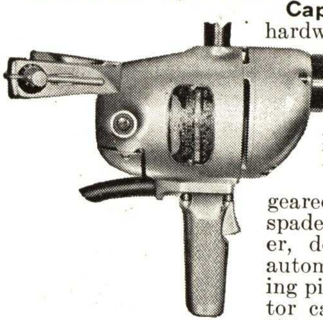
Capacity: in steel, ⅜ inch; in hardwood, ¾ inch. Standard no load speed, 900 rpm.; full load, 625 rpm. Length overall, 13½ inches. Standard equipment: 3-jaw Jacobs threaded chuck and key; 3-conductor cable and plug; trigger switch with locking pin; spade handle with key holder; pipe handle and removable commutator cover.

Net weight, 9½ pounds; shipping weight, 12¾ pounds.

Cat. No. **362**, Specify Voltage ....each **$53.00**

No. 361 ½-Inch Standard Duty Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 32, 110, 220, or 250 Volts

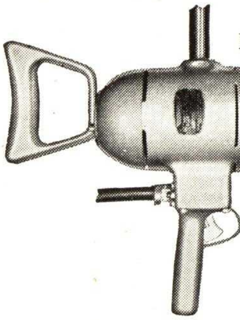


Capacity: in steel, ½ inch; in hardwood, 1 inch. For maintenance repairs and general use. Ball bearing. No load speed, 400 rpm.; full load, 275 rpm. Overall length, 20 inches. Standard equipment: geared chuck with right angle key; spade handle with chuck key holder, detachable pipe handle and automatic release switch with locking pin for optional use; 3-conductor cable and plug. Net weight, 9¾ pounds; ship. weight, 13 lb.

Cat. No. **361**, Specify Voltage....................each **$53.00**

No. 40 ½-Inch Heavy Duty Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts

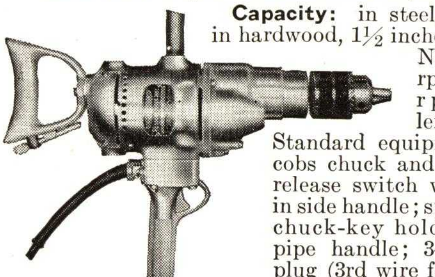


Capacity: in steel, ½ in.; in hardwood, 1 in. For heavy duty drilling, driving hole saws, wood augers, etc. Ball bearings on chuck spindle. Armature shaft mounted on ball bearings. No load speed, 500 rpm.; full load, 330 rpm. Overall length, 18½ inches. Standard equipment: 3-jaw Jacobs chuck and key, spade handle with chuck key holder, detachable pipe handle; automatic release switch; 3-conductor cable and plug. Net wt. 17 lb.

Cat. No. **40**, Specify Voltage....................each **$68.00**

No. 239 ¾-Inch Standard Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts



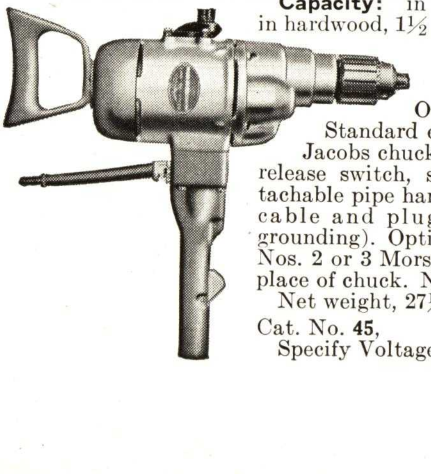
Capacity: in steel, 3/16 to ¾ inch; in hardwood, 1½ inches. Ball bearing. No load speed 250 rpm.; full load, 155 rpm. Overall length, 18¾ inches. Standard equipment: 3-jaw Jacobs chuck and key; automatic release switch with locking pin in side handle; spade handle with chuck-key holder; detachable pipe handle; 3-wire cable and plug (3rd wire for grounding). Optional equipment: Nos. 2 or 3 Morse taper socket in place of chuck. No extra charge.

Net weight, 19¼ pounds; shipping weight, 25½ pounds.

Cat. No. **239**, Specify Voltage....................each **$68.00**

No. 45 ¾-Inch Heavy Duty Black & Decker Portable Electric Drills

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts



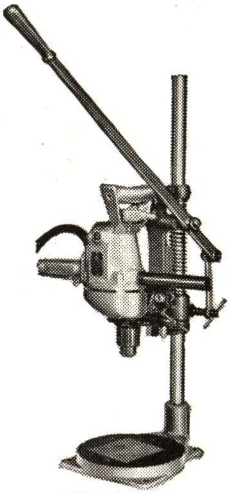
Capacity: in steel, 3/16-¾ in.; in hardwood, 1½ in. Ball bearing. No load speed, 375 rpm.; full load, 200 rpm. Overall lgth., 21 in. Standard equipment: 3-jaw Jacobs chuck, key, automatic release switch, span handle, detachable pipe handle; 3-conductor cable and plug (3rd wire for grounding). Optional equipment: Nos. 2 or 3 Morse taper socket in place of chuck. No extra charge.

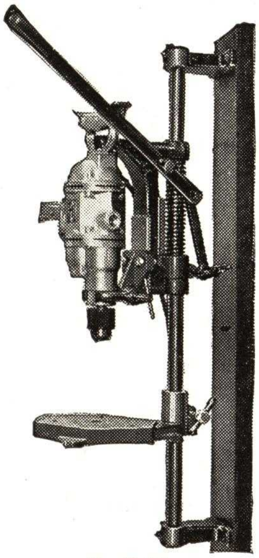
Net weight, 27¼ pounds.

Cat. No. **45**,
Specify Voltage.....each **$97.00**

Black & Decker Drill Stands

No. 22148


No. 22145


No. 31454

These drill stands increase the utility of Black & Decker Drills and Screwdrivers by converting the portable units into drill presses for heavy duty and precision work.

With the adjustable features of these stands, no adapters are required, and one stand will fit several different tools. An adjustable jaw clamp fits spindle housings of varying sizes, and an adjustment for tool length is quickly made on Size 20 and 60 stands.

The handle leverage enables the operator to put tremendous pressure on the work, or feed slowly and smoothly for most accurate work. The tool bracket can be raised or lowered on the supporting column and swung in an arc to any desired position.

Drill stands for post or pedestal mounting are especially recommended where unusually large pieces are to be drilled. The work table as well as the tool bracket can be raised or lowered, or swung out of the way, if not required.

Lever, bracket assemblies and base of drill stands are cast iron; the column is steel.

Cat. No.		Each	Stand Size	For Use With			Max. Feed In.	C/L Bit to C/L Col. In.	Ship. Wt. Lb.
				Cat. No.	Cap. In.	Tool			
22148	Bench	$15.	20	345,346	¼	Std. Holgun	2	5¼	19½
				31	¼	Std. Drill...			
				30	¼	Jr. Drill....			
				32,386	¼	.....*.....			
				387,360	5/16	.....*.....			
				490	⅜	Std. Drill...			
				402,350	†No. 10	Scrugun....			
				383	3/16	Tapgun....			
				53,169	†No. 14	.....‡.....			
				54,164	†No. 18	.....‡.....			
				90	¼	Tapper....			
22145	Bench	22.	40	362	⅜	.....*.....	4	6	37
				38	½	Jr. Drill....			
				361	½	Std. Drill...			
				40	½	.....*.....			
13857	Bench	32.	60	238	⅝	Std. Drill...	4	8	69
31454	Post.	38.	60	42	⅝	.....*.....	4	8	112
31455	Ped.	40.	60	239	¾	Std. Drill...	4	8	132
				45	¾	.....*.....			
				47	1	.....*.....			
26607	Bench	45.	80	494	1¼	.....*.....	4	12	90

*Heavy duty drill. †Wood screw.
‡Screwdriver and nut runner.

Black & Decker Portable Electric Drill Accessories

Geared Chucks with Keys

No.	Cap. In. and Type	Type Drill	Each
23224	3/16, Threaded	Type A Hornet	$5.00
23226	¼, Threaded	All Shorty; Type A Holgun; Type B Junior.	4.50
3030	¼, Tapered	All Special; Type A Junior	4.50
7705	¼, Tapered	¼" Heavy Duty (A-G)	4.50
23227	¼, Threaded	All ¼" Std.; ¼" H.D. (H-L)	4.50
23762	¼, Threaded	Type B Holgun; All H.D. Holguns	4.50
23228	5/16, Threaded	5/16" H.D. (L-R); 5/16" Utility (K-T)	5.25
6133	5/16, Tapered	All Previous 5/16"	5.25
23229	⅜, Threaded	All ⅜" Std.; ⅜" H.D. (N-T); ⅜" Utility.	5.50
7244	⅜, Tapered	All Previous ⅜"	5.50
23230	½, Threaded	Type B ½" Junior; ½" Std. (E-F)	6.00
15839	½, Tapered	Type A ½" Junior	6.00
9480	½, Tapered	½" H.D. (A-E); ½" Spec. (C-D).	7.00
11329	⅝, Tapered	⅝" H.D. (A-D); Type A ⅝" Std.	8.50
9522	¾, Tapered	All ¾" H.D.; Type A ¾" Std.	11.00

Portomatic Keyless Chucks

Can be furnished as replacements on all ¼, 5/16 and ⅜-inch drills.

No.	Type	Type Drill	Each
12792	Tapered	¼" Special	$5.75
10666	Tapered	¼" H.D., All Types to G; GP to LP	5.75
21758	Threaded	¼" Holgun and Hornet	5.75
22029	Threaded	¼" H.D. Types H to L; ¼" Std. Types B, C, CP, CSP	5.75
10800	Tapered	5/16" and 5/16" H.D. All Types to H; HP to RP	6.75
22030	Threaded	5/16" Utility, Types K to T 5/16" H.D., Types L to R	6.75
22031	Threaded	⅜" Standard, Types M to U; ⅜" Standard	7.00

Chucks Mounted on Morse Taper Arbors

No.	Description	Each
1585	⅝" on No. 2 M.T.A. for all ⅞" H.D. Drills Except Types D and F	$9.75
22083	⅝" with No. 3 M.T.A. to Fit 1" and ⅞" H.D. Drills, Types D and F	10.25
10601	¾" with No. 3 M.T.A. to Fit 1" Drills and ⅞" Heavy Duty Types D and F	12.75
3151	No. 2 Morse Taper Arbor Only	1.25
10949	No. 3 Morse Taper Arbor Only	1.75

Morse Taper Sockets

For use with taper shank bits in all drills normally equipped with Jacobs chucks, from ¼ to ¾-inch sizes.

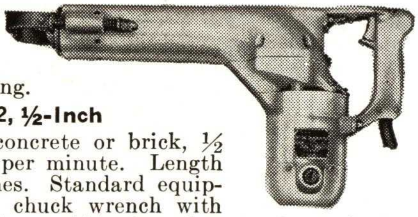
23009	No. 1 Threaded for ¼" Std., ¼" H.D.; 5/16" Utility; 5/16" H.D.; ⅜" Utility; ⅜" H.D.; ½" Junior; ½" Standard	$4.20
18849	No. 1 for ⅜" Drill	4.20
11066	No. 1 for ½" Drill	4.20
11676	No. 1 for ⅝" and ¾" Drills	4.20
25981	No. 2 Threaded for ¼" Std.; ¼" H.D.; 5/16" Utility; 5/16" H.D.; ⅜" Standard; ⅜" H.D.; ½" Junior; ½" Standard	5.00
12186	No. 2 for ½" H.D.	5.00
11067	No. 2 for ⅝" and ¾" Drills	5.00
12849	No. 3 for ⅝" and ¾" Drills	6.00

Reducing Sleeves to Adapt Morse Taper Sockets to Next Smaller Taper Bits

4122	No. 4–3	$2.50
3153	No. 3–2	2.00
3152	No. 2–1	1.50
22480	No. 3–1	2.00

Black & Decker Portable Electric Hammers

Universal Motor, A.C. and D.C.—For 110, 220, or 250 Volts



For drilling, channeling, caulking, tamping, gouging and shaping.

No. 102, ½-Inch

Capacity: in concrete or brick, ½ inch; 2400 blows per minute. Length overall, 12⅞ inches. Standard equipment: No. 22587 chuck wrench with dust shield, ½-inch speed-bit, 3-conductor cable and plug, rocker type switch, tool retaining spring, drift key, carrying case and can of oil. Net weight, 5¾ pounds.

Cat. No. **102**, Specify Voltage..............each **$85.00**

No. 103, ¾-Inch

Capacity: in concrete or brick, ¾ inch; 2300 blows per minute. Length overall, 14⅝ inches. Standard equipment: No. 22587 chuck wrench with dust-shield, ⅝-inch star-drill, 3-conductor cable and plug, trigger switch, tool retaining spring, drift key, carrying case and can of oil. Net weight, 10¾ pounds.

Cat. No. **103**, Specify Voltage..............each **$115.00**

No. 104, 1⅛-Inch

Capacity: in concrete or brick, 1⅛ inches; 2200 blows per minute. Length overall, 18⅛ inches. Standard equipment: No. 22754 chuck wrench with dust-shield, 1-inch star-drill, 3-conductor cable and plug, trigger switch, tool retaining spring, drift key, carrying case and can of oil. Net weight, 19¼ pounds.

Cat. No. **104**, Specify Voltage..............each **$145.00**

No. 105, 2-Inch

Capacity: in concrete or brick, 2 inches; 1950 blows per minute. Length overall, 20¼ inches. Standard equipment: No. 21726 turning handle, 1½-inch star-drill, 3-conductor cable and plug, trigger switch, tool retaining spring, carrying case and can of oil. Net weight, 29¼ pounds.

Cat. No. **105**, Specify Voltage..............each **$195.00**

Black & Decker Screwdriver Bits

For Phillips Head Screws

Bit has a cross form slot instead of the conventional slot and four different slot sizes designated as Nos. 1, 2, 3 and 4. Several screw sizes are covered by one slot size.

	Screw Sizes — Slot No.			
Type of Screw	1	2	3	4
Wood Screws				
Flat and Oval Head........	Diam. No. 4 and Smaller	No. 5 to No. 9	No. 10 to No. 16	No. 18 to No. 24
Round Head...	Diam. No. 4 and Smaller	No. 5 to No. 10	No. 11 to No. 16	No. 18 to No. 24
Stove Bolts				
Flat, Oval and Oven Head................		5/32″ and 3/16″	¼″	5/16″ to ½″
Round Head.............		5/32″ and 3/16″	¼″ and 5/16″	⅜″ and ½″
Machine Screws				
Flat, Oval and Binding Head	Diam. No. 4 and Smaller	No. 5 to No. 10	No. 12 and ¼″	5/16″ to ½″
Fillister and Round Head.	Diam. No. 4 and Smaller	No. 5 to No. 10	No. 12 to 5/16″	⅜″ and ½″
Truss Head....	Diam. No. 5 and Smaller	No. 6 to No. 10	No. 12 and ¼″	5/16″ to ½″
Sheet Metal Screws				
Flat, Round Oval, Binding and Stove Hd.	Diam. No. 4 and Smaller	No. 6 to No. 10	No. 12 and No. 14	....

For Torsimeter and Scrugun

With ¼ Inch Hexagon Shanks

Projecting length from chuck to bit end, 1⅛ inches.

No..............................	**17922**	**17923**	**21366**
Each..............................	**$.64**	**.64**	**.64**
Slot Size No..................	1	2	3

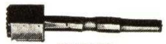
For Nos. 14 and 18 Screwdrivers

With 7/16 Inch Hexagon Shanks

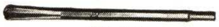
Projecting length from chuck to bit end, 2½ inches.

No....................	**18938**	**17924**	**17925**	**17926**
Each....................	**$.85**	**.85**	**.85**	**.85**
Slot Size No...........	1	2	3	4

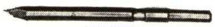
Black & Decker Electric Hammer Tools



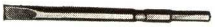
BUSH TOOL
For surfacing concrete walls to remove imprints of forms.



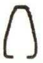
STAR DRILL
For concrete, brick and soft stone



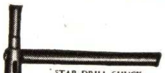
BULL POINT
For breaking up concrete or brick walls



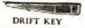
COLD CHISEL
For cutting and chipping steel, cast iron, concrete, etc



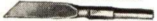
TOOL RETAINING SPRING
For retaining Bull Points, Bush and Seam Tools, Cold Chisel, Gouge and Chisel.



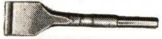
STAR DRILL CHUCK
For holding and turning Star and Diamond Point Drills.



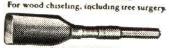
DRIFT KEY
For removing Star and Diamond Point Drills from chuck.



SEAM TOOL
For removing mortar between bricks to make openings in brick walls.



FLAT WOOD CHISEL
For wood chiseling, including tree surgery.



WOOD GOUGE
For general wood chiseling operations, including tree surgery.

Star Drills

No.	Each	Size Inches
7167	**$.60**	¼x 5
7168	**.65**	5/16x 5
7160	**.65**	⅜x 5
7169	**.70**	7/16x 5
7161	**.70**	½x 9
9364	**.85**	½x18
7170	**.75**	9/16x 9
7162	**.75**	⅝x 9
9372	**.90**	⅝x18
7171	**.80**	11/16x 9
24673	**.80**	11/16x 9
7163	**.80**	¾x 9
9380	**1.00**	¾x18
9382	**1.25**	¾x24
23081	**.80**	¾x 9
23082	**1.00**	¾x18
23083	**1.25**	¾x24
7172	**.90**	13/16x 9
7097	**.90**	⅞x 9
9388	**1.25**	⅞x18
9390	**1.50**	⅞x24
7173	**1.00**	15/16x 9
7096	**1.00**	1 x 9
9396	**1.50**	1 x18
9398	**1.75**	1 x24
10751	**1.25**	1⅛x12
10981	**2.00**	1⅛x24
21942	**1.75**	1¼x18
21943	**2.75**	1¼x30
21944	**2.00**	1⅜x18
21945	**3.00**	1⅜x30
21946	**2.25**	1½x18
21947	**3.25**	1½x30
21948	**2.75**	1¾x18
21949	**3.75**	1¾x30
21950	**3.50**	2 x18
21951	**4.50**	2 x30

Speed-Bits

No.	Per Doz.	Point Diam. In.	Lgth. Overall In.
23453	**$5.40**	3/16	3
11363	**5.40**	¼	3½
11364	**6.00**	5/16	3¾
11365	**6.00**	⅜	4
11366	**6.60**	7/16	4½
24024	**6.60**	½	5
11367	**7.20**	½	9
24025	**7.20**	9/16	5
11368	**7.80**	9/16	9
24026	**7.20**	⅝	5
11369	**7.80**	⅝	9

Scaling Chisels

No.	Each	Size Inches
12446	**$2.15**	1¼x 9
17314	**2.25**	1½x 9
17315	**2.35**	2 x 9
12401	**2.40**	1½x12
22886	**2.50**	2 x12
22887	**4.25**	2½x12

Cold Chisels

No.	Each	Size Inches
11108	**$1.40**	⅝x 8
7095	**1.50**	⅞x 9
9405	**2.25**	⅞x20

Flat Wood Chisels

No.	Each	Size Inches
9039	**$3.00**	2x 9
Wood Gouges		
20743	**$5.50**	1 x12
20745	**6.00**	1½x12
20750	**5.50**	1 x14
20749	**6.00**	1½x14
9037	**4.00**	2 x 9
Tool Blanks		
11107	**$1.15**	10
7267	**1.25**	12
Seam Tools		
17232	**$2.25**	9
9035	**2.35**	9
Bull Points		
23804	**$1.65**	10
23805	**2.30**	18
9036	**1.80**	12
9410	**2.50**	20
Web Cutting Tools		
20859	**$6.75**	19
Bushing Tools		
11624	**$6.25**	8
9040	**6.25**	9
10684	**4.75**	..
4-Point Scaling Tools		
17335	**$2.25**	9

Accessories

Special Lubricating Hammer Oil

No.	Each	Size Can
22926	**$.25**	3 Oz.
22930	**.50**	1 Pt.
22931	**.85**	1 Qt.
22932	**2.50**	1 Gal.

Carrying Cases

No.	Each	For Hammer Cap., In.
18296	**$7.75**	½
18389	**9.00**	¾
21003	**10.00**	1⅛
18679	**12.50**	2

Drift Keys

No. **7276**, For all Chuck Wrenches....each **$.35**

Tool Retaining Springs

No.	Each	For Hammer Cap., In.
10909	**$.15**	½ & ¾
21750	**.15**	1⅛

Dust Shields

No.	Each	For Chuck Wrench No.
17746	**$.35**	22587, 22510, 23806
17747	**.35**	22754 and 22749

Chuck Wrenches

No	Each	For Hammer Cap., In.
22587	**$3.85**	½ & ¾
23806	**3.85**	¾
22749	**4.25**	1⅛
22754	**5.00**	1⅛

Turning Handles

No. 21726, For 2-In. Cap. Hammer.ea. **$2.00**

Chucks

No. 22510......each **$5.00**

Black & Decker Portable Electric Quick-Saws

Universal Motor, A.C. and D.C.—For 110, 220 or 250 Volts

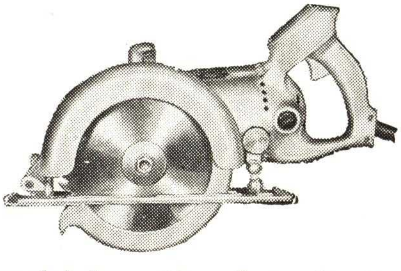
A fully adjustable saw which can be used with a variety of blades for all types of cutting in wood, stone, tile, asbestos, composition and thin metals.

Instant-release trigger switch, and quick action telescoping blade guard. Saw-grip switch handle and auxiliary handle.

Standard equipment: 3-wire cable and plug, one combination rip and crosscut saw blade; adjustable shoe, detachable rip-cut guide, and carrying case and T-handle wrench.

No. 260, 7-Inch

Depth of Cut, 2⅜ Inches



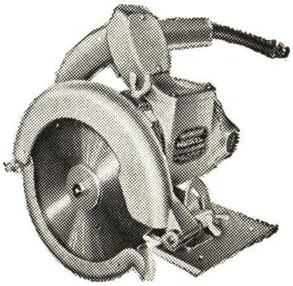
Recommended for cutting all popular lumber sizes. Ground steel worm and bronze worm wheel.

Diameter saw blade, 7¼ inches. Maximum depth of cut: vertical, 2⅜ inches (2½ in. dressed); 45° angle, 1¾ inches. Net weight, 18¾ pounds.

Cat. No. **260**, Specify Voltage..................each **$110.00**

No. 382, 8-Inch

Depth of Cut, 2⅝ Inches



Adapted to quick cutoff work. Helical gears, splined spindle.

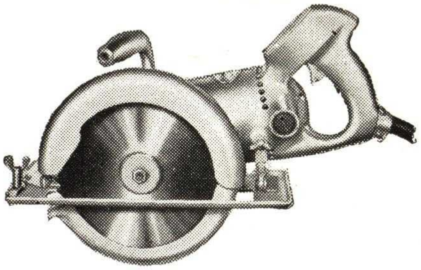
Diameter saw blade, 8⅛ inches. Maximum depth of cut: vertical, 2⅝ inches (3 in. dressed); 45° angle, 2 inches.

No load speed, 5000 rpm. Overall length, 13¼ inches. Net weight, 20¼ pounds.

Cat. No. **382**, Specify Voltage................each **$130.00**

No. 375, 9-Inch

Depth of Cut, 3⅛ Inches



For extra large cutting. Ground steel worm and bronze worm wheel.

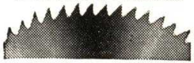
Diameter saw blade, 9¼ inches. Maximum depth of cut: vertical, 3⅛ inches (3½ in. dressed) 45° angle, 2⅜ inches.

No load speed, 2500 rpm. Overall length, 19¼ inches. Net weight, 26 pounds.

Cat. No. **375**, Specify Voltage................each **$145.00**

Black & Decker Portable Electric Saw Blades

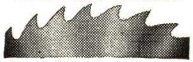
Crosscut Blades



For fast cross-cutting. Makes a smoother cut than combination blade.

No.	Each	Diam. In.	Use With Quick-Saw No.
20359	**$4.40**	5	35
11732	**4.65**	6	6″
19773	**5.25**	7¼	7″
***11843**	**6.50**	8	8″
23160	**6.50**	8⅛	8″
22740	**7.35**	9¼	9″
11868	**8.75**	10	10″

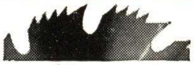
Combination Rip and Crosscut Blades



A fast blade for ripping all kinds of wood, but can be used for either crosscutting or ripping.

20268	**$4.40**	5	35
11520	**4.65**	6	6″
19774	**5.25**	7¼	7″
***11701**	**6.50**	8	8″
23161	**6.50**	8⅛	8″
22728	**7.35**	9¼	9″
11867	**8.75**	10	10″

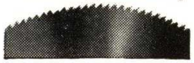
Planer or Mitre Blades



For making very smooth cuts, both rip and crosscut. Used for interior finish and trim.

20358	**$6.75**	5	35
11942	**8.75**	6	6″
20362	**8.25**	7¼	7″
***11945**	**10.00**	8	8″
23158	**10.00**	8⅛	8″
22743	**11.25**	9¼	9″
11948	**14.00**	10	10″

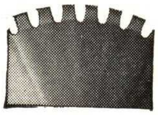
Non-Ferrous Metal Cutting Blades



Designed for cutting soft, light gage metal. Blade has fine teeth which are filed straight across the face.

24352	**$5.25**	5	35
11943	**4.65**	6	6″
21868	**5.85**	7¼	7″
11946	**7.00**	8	8″
24073	**7.00**	8⅛	8″
22744	**7.65**	9¼	9″

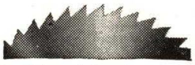
Friction Blades



For cutting corrugated galvanized sheets. Cuts faster and with less dirt than abrasive disc. Taperground for clearance.

No.	Each	Diam. In.	Use with Quick-Saw No.
24771	**$7.00**	6	7″
24772	**7.90**	7	8″
24773	**8.75**	8	9″

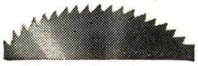
Nail Cutting Blades



Used in shipping and receiving departments and on repair and maintenance work. For opening boxes and crates and for ripping up floors where nails are encountered.

20356	**$7.00**	5	35
20360	**8.25**	7¼	7″
***20576**	**9.35**	8	8″
23159	**9.35**	8⅛	8″
22741	**10.00**	9¼	9″

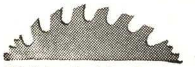
No. 20363 Compo-Board and Wallboard Blades



A 5-inch blade for use with No. 35 saw only. Set to give ample clearance and prevent clogging.

No. **20363**......each **$6.15**

Grooving Saw Blades



A 5½-inch blade for use with the 7-inch saw only. Made in one piece, but with teeth set in two planes, so that a grooving cut, similar to a dado head, can be made.

No.	Each	Width Cut, In.
23056	**$7.65**	1/8
23057	**9.00**	3/16
23058	**9.35**	1/4
23059	**10.00**	5/16
23060	**10.50**	3/8

Diamond-Shape Drive Adapters

A special inner clamp washer for holding saw blades with diamond shaped drive openings on Quick-Saw spindle.

No.	**23277**	**24080**	**24081**
Each	**$2.25**	**3.50**	**3.50**
For Use With Quick-Saw	7″	8″	9″

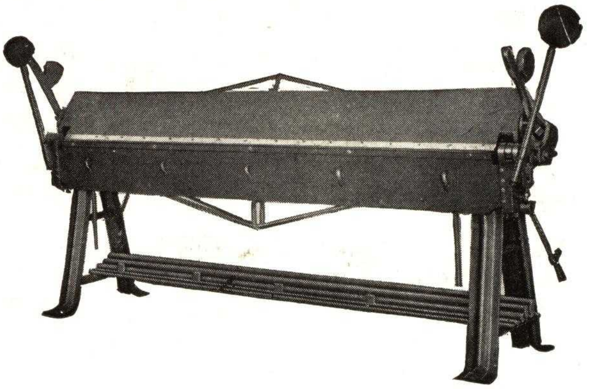
Abrasive Discs

Nos. 20368 to 22739 for cutting and slotting in slate, marble, asbestos, tile, transite and porcelain; Nos. 23582 to 23584 for hard ferrous (iron base) metals in thin gages.

No.	Each	Size In.	Use With Quick-Saw No.	No.	Each	Size In.	Use With Quick-Saw
20368	**$1.70**	5x1/8	35	**22739**	**$3.15**	9x1/8	9″
11944	**2.00**	6x1/8	6″	**23582**	**2.30**	7x1/8	7″
19766	**2.30**	7x1/8	7″	**23583**	**2.55**	8x1/8	8″
***11947**	**2.55**	8x1/8	8″	**23584**	**3.15**	9x1/8	9″

*The 8 and 10-inch blades have the same diameter holes, and the 8-inch blade can be used on the 10-inch saw.

Chicago Steel Hand Bending Brakes



Adapted for a large variety of work, such as cornice, gutter, square and octagon pipe, skylights, flashing, ridge roll, roofing, ventilating, furnace, auto radiator, fender and body, soda fountains, tanks, corrugated drainboards, etc. Being constructed of steel throughout, it is light in weight but strong and rigid. Will stand hard usage and will not spring or warp.

Each end clamps independently on brakes over four feet long. The top jaw opens wide and adjustment is provided for clamping pressure. The bending leaf is perfectly balanced. Provision is made on both ends to allow for the bending of work on which a crosswise flange has been bent. Set screws provide adjustment of upper jaw forward and back for light or heavy material and sharp or rounding bends.

Special manganese steel bending edges are provided to withstand wear and maintain extreme accuracy under continuous hard use.

The rated capacity is for mild sheet steel and for bending a flange of one inch or wider on sheets of full capacity. Narrower flanges can be bent on lighter metal in proportion.

Regularly furnished with improved adjustable stop gauge for regulating angle of bends and wrenches to fit adjustable parts.

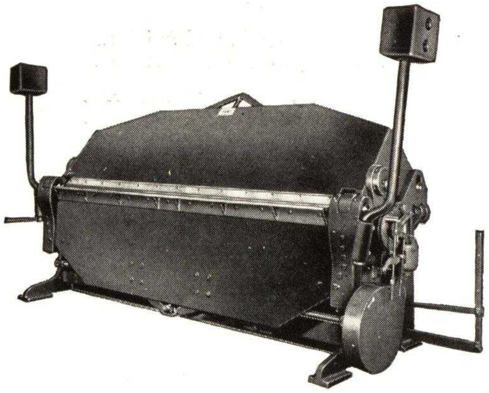
Moulding forms are not included in prices. An extra charge is made for set of five moulding forms and clamps.

Special gauges, attachments or changes in construction quoted on upon receipt of full particulars regarding requirements.

		Length			Approx.
No.	Each	Feet	Inches	Capacity Gage	Weight Pounds
312	......	3	½	12	950
314	......	3	½	14	685
316	......	3	½	16	460
412	......	4	½	12	1190
414	......	4	½	14	835
416	......	4	½	16	575
512	......	5	1	12	1810
514	......	5	1	14	1360
516	......	5	1	16	1020
518	......	5	1	18	705
612	......	6	1	12	2030
614	......	6	1	14	1550
616	......	6	1	16	1165
618	......	6	1	18	830
812	......	8	1	12	2485
814	......	8	1	14	1935
816	......	8	1	16	1510
818	......	8	1	18	1015
1014	......	10	1	14	2955
1016	......	10	1	16	2490
1018	......	10	1	18	1940
1218	......	12	1	18	4175
1222	......	12	1	22	2795

No. 204 Chicago Steel Power Bending Brakes

Belt or Motor Drive



Motor Drive

For cold bending heavy plates without fracturing the material. The variety of bending which can be done is practically unlimited.

Also adapted for bending large quantities of small pieces, such as flat and round bars in one operation.

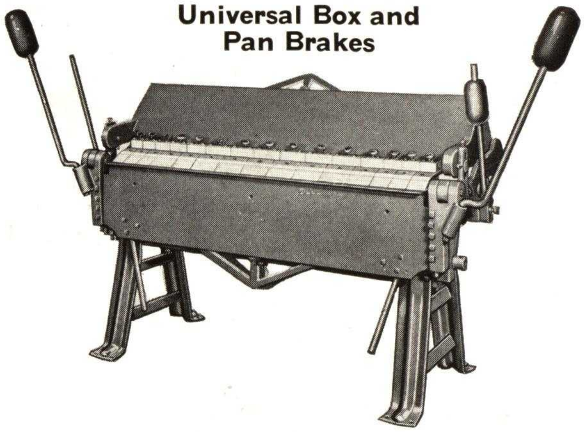
Machines are available from 3 to 16 feet to bend from light sheets to ¾-inch plate.

Construction is of steel throughout.

All gears are machine cut.

Complete specifications and information upon application.

Universal Box and Pan Brakes



For forming electric switch boxes, cutout boxes, and panel board cabinets. Also used in manufacture of conveyor buckets, tote boxes, and radio chassis.

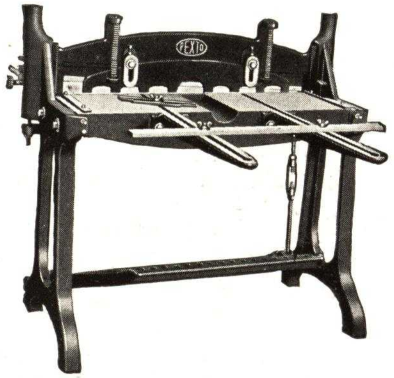
Combines features of the Universal Brake with the Box and Pan Brake and Standard Hand Brake. Nose bars are quickly interchangeable. Radius bends can be made with round nose bars. A full length nose bar can be used in place of the individual nose bars for each size finger. Tubular shapes can be formed by extending nose bars between fingers.

No.	Length Feet	Capacity Gage	Extension Finger, In.	Weight Pounds	No.	Length Feet	Capacity Gage	Extension Finger, In.	Weight Pounds
L30	3	12	6	1315	**W37**	8	14	6	2600
W30	3	14	6	960	**W38**	10	14	6	3750
L31	4	12	6	1700	**R38**	10	16	6	3200
W31	4	14	6	1252	**W33**	3	14	8	1060
L32	5	12	6	2320	**W34**	4	14	8	1570
W32	5	14	6	1800	**W35**	5	14	8	1920
L36	6	12	6	2550	**W39**	6	14	8	2215
W36	6	14	6	2030	**W40**	8	14	8	2900
L37	8	12	6	3100	....	..	..	..	....

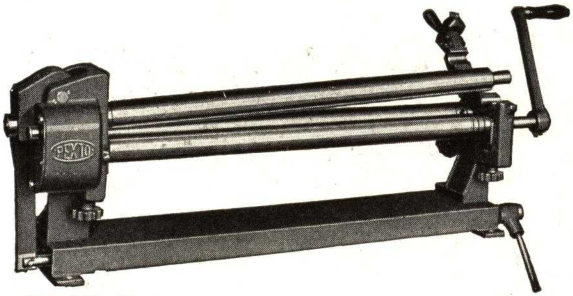
Further information and prices upon application.

Pexto Machines and Tools

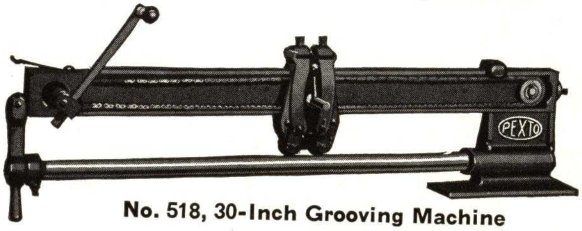
For Sheet Metal Work



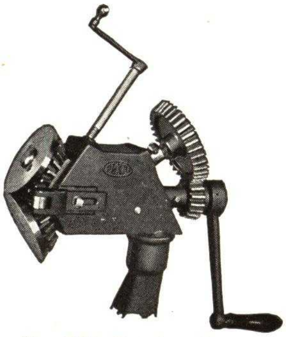
No. 137, 36-Inch Squaring Shear with Hold-Down Attachment



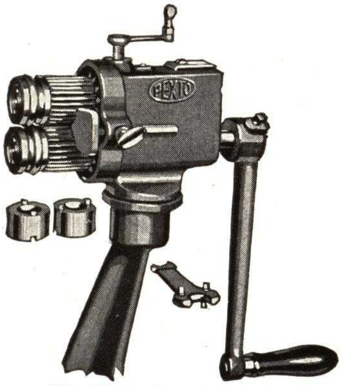
No. 381, 36x2-Inch Slip Roll Forming Machine



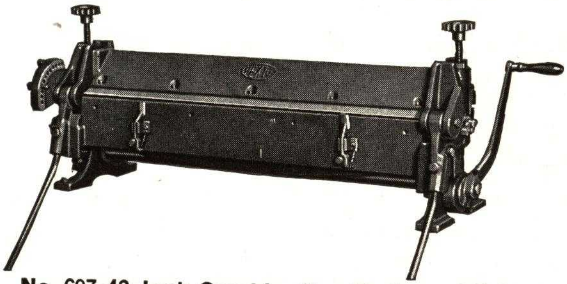
No. 518, 30-Inch Grooving Machine



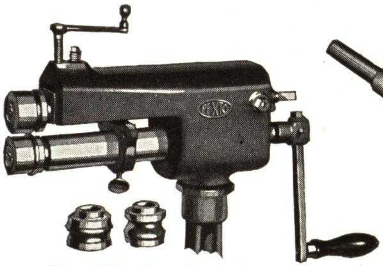
No. 561, Setting Down Machine



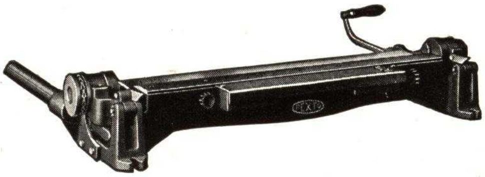
No. 0581, Combination Crimper and Beader



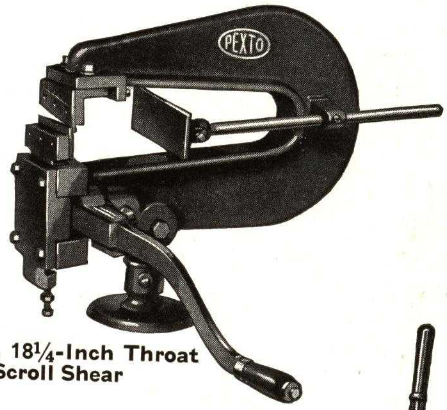
No. 697-42-Inch Combination Brake and Folder 20-Gage Capacity



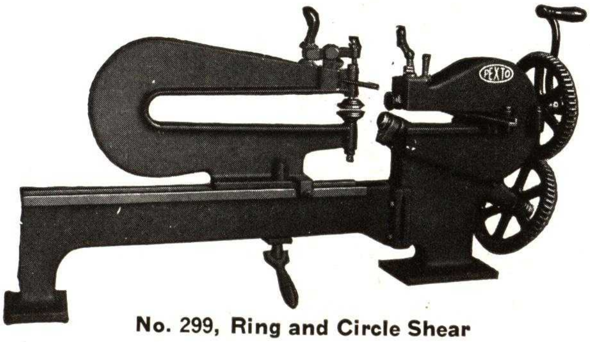
No. 620, Beading Machine



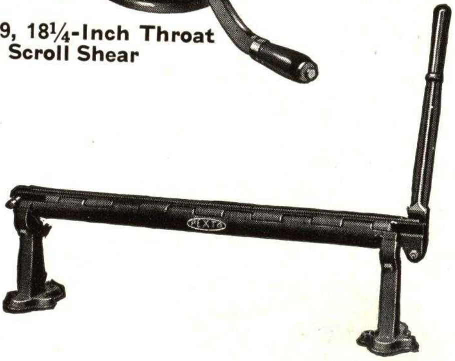
No. 63, 30-Inch Adjustable Bar Folder



No. 269, 18¼-Inch Throat Scroll Shear



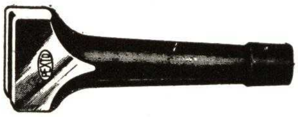
No. 299, Ring and Circle Shear



No. 11, 30-Inch Pipe Folder

Catalog and Prices Upon Request

Pexto Hand Groovers



Designed especially for the use of sheet metal workers and tinsmiths.

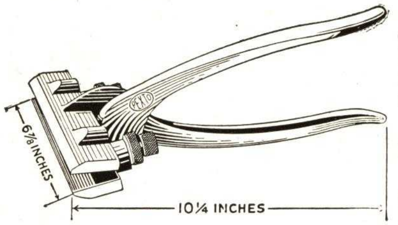
Forged from a special, tough, high grade steel, scientifically hardened.

Heads are highly polished.

Packed 2 in a box.

No	0	2	4
Each	**$1.70**	**1.50**	**1.40**
Size Groove . . . inches	3/8	5/16	7/32
Weight . . . pounds	1¼	1¼	1

No. 795 Pexto Jumbo Handy Seamers



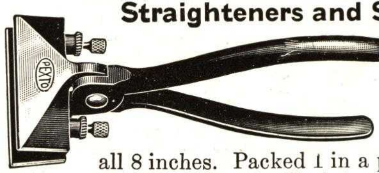
The Jumbo Seamer is a large and heavy tool designed to meet the requirements of the roofer.

Malleable iron, japanned.

A knurled adjustable screw gage with knurled lock nuts is provided.

No		795
Each		**$8.10**
Blade Length	inches	6⅞
Blade Width	inches	1 3/16
Overall Length	inches	10¼
For Seams	inches	1
Weight	pounds	3

No. F793 Pexto Forged Steel Fin Straighteners and Seamers



Black enamel finish, polished jaws.

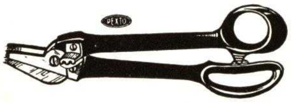
Length: blades, 3½ inches; overall 8 inches. Packed 1 in a paper wrapper.

No. F793, Weight Each 1 pound . . . . each **$4.10**

Pexto Double Cutting Shears

Forged steel blade with hardened cutting edge. Polished head. Malleable iron handles, black finish.

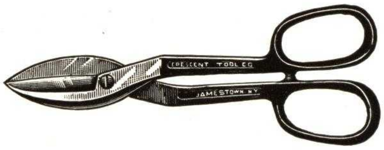
No. 02A has no crimping attachment.



Packed one in a box.

No	2A	02A
Per Pair	**$3.90**	**3.70**
Overall Lgth. in.	12¾	12¾
Weight, Ea. . lb.	3	3

Crescent Tinners' Snips

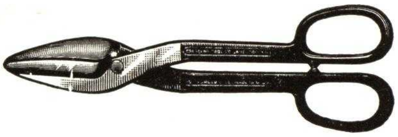

CRESCENT TOOL CO.
JAMESTOWN, N.Y.

Forged of special steel. Blades have keen, strong edge that will retain its sharpness. Powerful leverage makes them cut evenly and smoothly. Has polished blades and blue enameled handles.

Packed 1 in a box.

No.	S47	S48	S49	S410	S411	S412	S413	S414
Each	**$.95**	**1.00**	**1.05**	**1.20**	**1.35**	**1.60**	**2.00**	**2.25**
Lgth. . . in.	7	8	9	10	11	12¾	13⅞	14⅞
Cut . . . . in.	1¾	1⅞	2	2¼	2½	3	3½	4
Wt. . . . . oz.	7	8	9	13	19	25	32	38

No. U412 Crescent Combination Pattern Snips



Forged steel snip designed after the standard circular cutting style. Have keen edges, cut smoothly and easily.

Polished blades. Blue enameled handles.

Length, 12¾ inches.

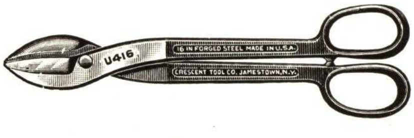
Cut, 3 inches.

Weight, 1 pound 12 ounces.

Packed 1 in a box.

Each **$1.85**

No. U416 Crescent Heavy Duty Snips


U416
16 IN FORGED STEEL MADE IN U.S.A.
CRESCENT TOOL CO. JAMESTOWN, N.Y.

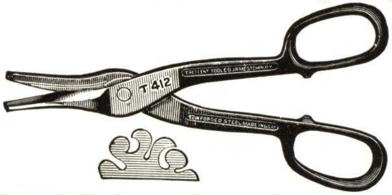
Cuts curves as well as straight lines.

Polished blades. Blue enameled handles.

Lgth. 16¼ in.; cut, 2¾ in.; wt. 4 lbs. Packed 1 in a box.

Each **$3.00**

Crescent Circular Cutting Snips


T412
CRESCENT TOOL CO. JAMESTOWN, N.Y.
FORGED STEEL MADE IN U.S.A.

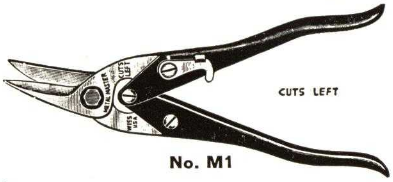
Designed specially for cutting out intricate patterns and curves. They cut smoothly and leave the metal unbent. Forged of special steel; blades ground on special machines. Have polished blades and blue enameled handles.

Packed 1 in a box.

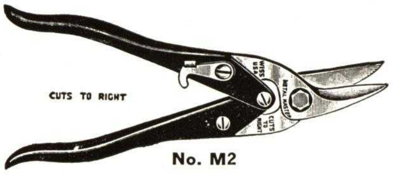
No		T47	T412
Each		**$1.30**	**1.85**
Length	inches	7	12
Cut	inches	1¾	3
Weight, Packed	ounces	7	25

Wiss Metal-Master Compound Action Aviation Snips

Used in the aviation, air conditioning, and sheet metal industries. Cuts ends of tubing, exhaust manifolds, etc. Also cuts circles, squares, and irregular patterns on stainless, dural, and monel metals. Cutting head forged from manganese molybdenum steel. Bolts and nuts of nickel steel to government specifications. All parts interchangeable. Fine serration on both jaws furnished regularly, deeper serration furnished without cost if specified.



No. M1

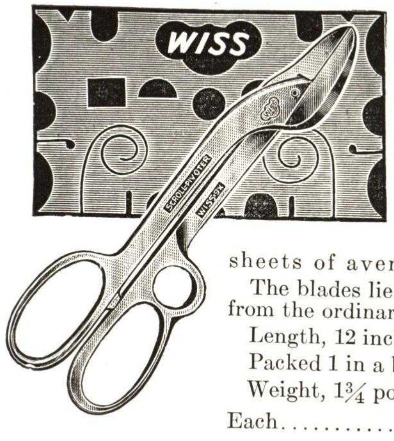


No. M2

Made in two matched patterns, "Cuts Left" and "Cuts Right." "Cuts Left" pattern furnished unless otherwise specified.

Length, 10 inches. Weight each, 12 ounces.

		Cuts Left	Cuts Right
No		M1	M2
Each		**$4.25**	**$4.25**
Rubber Guard Grips	per pair	**.60**	**.60**



Wiss 9X Scroll-Pivoter Snips

The pivoting principle of this snip enables it to cut intricate shapes with ease. Will cut ordinary galvanized sheets up to 18 gage and monel metal sheets of average thickness.

The blades lie flat exactly opposite from the ordinary cutting blade.

Length, 12 inches.

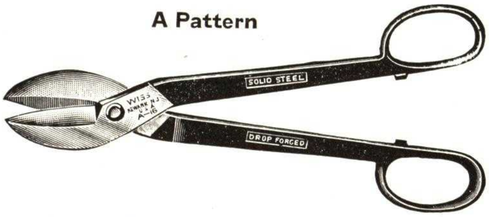
Packed 1 in a box.

Weight, 1¾ pounds.

Each........................ **$6.00**

No. A-16 Wiss Combination Bulldog Snips

A Pattern



For heavy duty work. Will cut curves and irregular shapes in the heavier metals.

Short powerful tempered jaws, long leverage, and strong bolts. Made of solid steel. Gray handles.

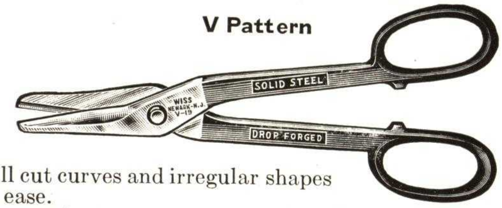
Length, 16 inches. Length of cut, 3 inches.

Packed in individual boxes. Weight, 3¾ pounds.

No. A-16..each **$3.90**

Wiss Combination Snips

V Pattern



Will cut curves and irregular shapes with ease.

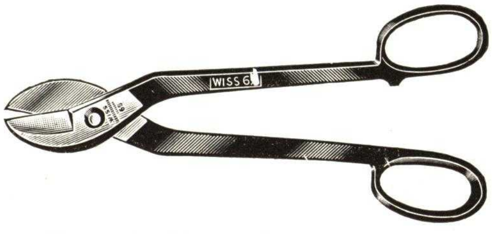
Accurately tempered jaws and strong bolts. Made of solid steel, drop forged. Gray handles.

No. V-13 is a handy pocket size snip.

Packed 6 in a box.

No.	V-19	V-13
Each	**$2.29**	**1.35**
Length ....inches	13	7
Length of Cut ....inches	3	1⅝
Weight ....pounds	1¾	½

No. 5 Wiss Bulldog Snips



For cutting tough alloys such as monel metal, stainless steel, etc. Also for cutting strap iron bands, etc.

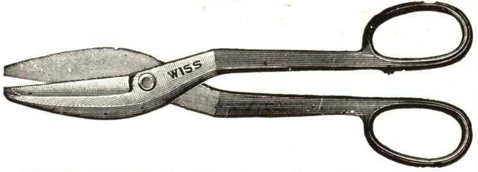
Precision ground inlaid steel blades. Short powerful jaws and long leverage.

Length overall, 17 inches.

Weight, 3⅞ pounds.

No. 5..each **$5.72**

Wiss Regular Tinners' Snips



A piece of fine crucible bar steel is welded to the inside edge of the blades. This gives the Wiss Snip its perfect cutting edge—an edge that will not break or chew the work and is always sharp.

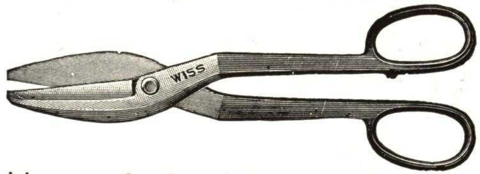
Blades are perfectly shaped, with points made strong and the handles formed so that they will not tire the hand.

Nos. 11 and 12 packed 6 in a box; all others, 1.

No.	12	11	10	9	8	7	6½
Each	**$1.97**	**2.39**	**2.81**	**3.12**	**3.64**	**4.16**	**4.68**
Full Length ......in.	8	9½	11½	12½	13¾	14¼	15¾
Length Cut ......in.	2	2¼	2½	3	3½	4	4½
Weight ......pounds	½	¾	1½	2	2½	3	3⅞

Wiss Regular Pattern High Power Tinners' Snips

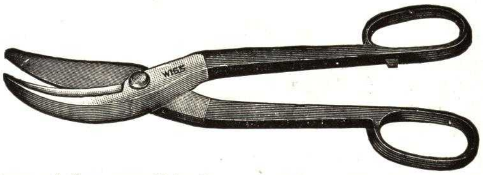
Special for Alloy and Stainless Steel



Precision ground and specially tempered to cut hard alloy metals such as stainless steel, monel metal, etc. Inlaid blades. Specify special for alloy and stainless steel.

No.	9	8
Each	**$3.12**	**3.64**
Full Length ....inches	12½	13¾
Length of Cut ....inches	3	3½
Weight ....pounds	2	2½

Wiss Curved Blade Tinners' Snips



A piece of fine crucible bar steel is welded to inside edge of blades, giving sharp, durable edge.

Blades are well shaped with strong points.

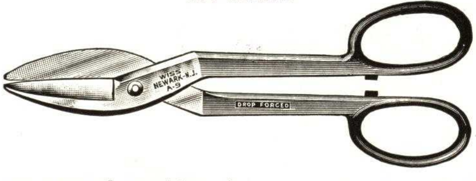
Handles are formed so that they will not tire the hand.

Packed 1 in a box.

No.	9CB	8CB
Each	**$4.68**	**5.40**
Full Length ....inches	12½	13¾
Length Cut ....inches	3	3½
Weight ....pounds	2	2½

Wiss Tinners' Snips

A Pattern

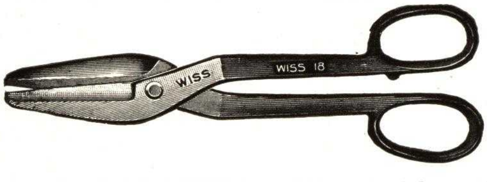


For use around machine shops, garages, household, and farms.

Made of solid crucible steel with gray japanned handles.

No.	A12	A11	A10	A9
Each	**$1.35**	**1.46**	**1.66**	**1.77**
Full Length ....inches	8	9¾	11	12½
Length of Cut ....inches	2	2¼	2½	3
Average Wt. per Doz. ....lb.	6	8	15	21

Wiss Combination Tinners' Snips



These snips will cut curved as well as straight work.

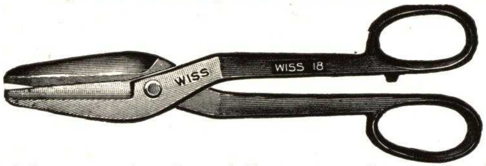
Frame is forged from a tough, special forging steel under a powerful hammer.

Handles can be hammered, bent and twisted without reaking.

No.		19	18	17
Each		**$3.43**	**3.95**	**4.47**
Full Length	inches	12½	13½	14½
Length of Cut	inches	3	3½	4
Weight	pounds	1⅞	2⅜	2⅞

Wiss Combination Pattern High Power Tinners' Snips

Special for Alloy and Stainless Steel

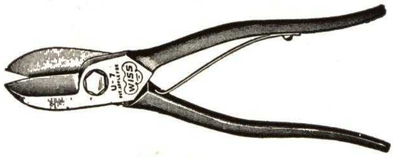


Precision ground and specially tempered to cut hard alloy metals. Straight blades ground and shaped for cutting curves and irregular shapes in addition to straight work.

No.		18	17
Each		**$3.95**	**4.47**
Full Length	inches	13½	14½
Length of Cut	inches	3½	4
Weight	pounds	2⅜	2⅞

Specify special for alloy and stainless steel.

No. U-7½ Wiss Regular Pattern Nu-Grip Snips



With Spring

Designed for general work on metal where straight cutting is necessary.

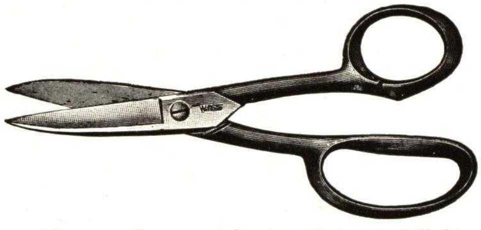
Made of crucible tool steel, accurately tempered; has hardened bolt and nut, fine adjustment.

Length 7½ inches.

Weight per dozen, 7 pounds.

No. U-7½, without Spring	per pair	**$2.25**
No. U-7½, with Spring	per pair	**2.60**

No. 1 Wiss Dental and Jewelers' Snips



For cutting precious metals, templates and light or thin metals. Fitted with screw and nut.

Japanned handles, nickeled blades.

Full length, 8 inches. Length of cut, 2½ inches.

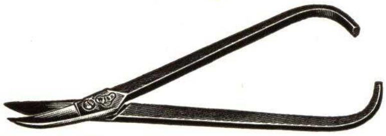
Packed 6 in a box.

Approximate weight per dozen, 4⅝ pounds.

No. 1 . . . . each **$2.10**

Made to order for left hand at extra cost.

No. J-7 Wiss Light Metal Snips

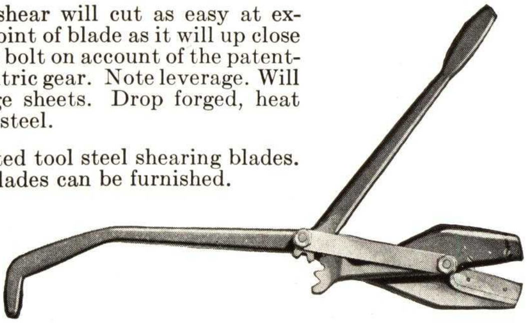


For light metal work. Made of fine tool steel. Length, 7 inches; cut, 1¼ inches. Weight per dozen, 3 pounds.

No. J-7, Curved	each	**$1.66**
No. J-7, Straight	each	**1.46**

No. 2 Whitney Bench Shears

Capacity, ⅛ Inch Thickness or Lighter

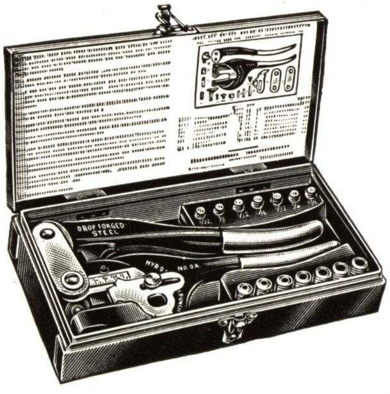


This shear will cut as easy at extreme point of blade as it will up close to hinge bolt on account of the patented eccentric gear. Note leverage. Will slit large sheets. Drop forged, heat treated steel.

Inserted tool steel shearing blades. Extra blades can be furnished.

No. 2, Shipping Weight, 15 Pounds . . . . each **$16.38**

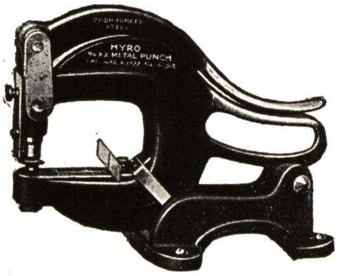
No. O.X. Parker-Kalon Metal Punch Sets



Punch is made of drop-forged steel. Front pointer and side gage combination enable operator to punch holes exactly where wanted without looking into throat. Does away with center punching. Capacity: ¼-inch hole in 14-gage sheet steel or equivalent. Set consists of punch complete with one each 3/32, ⅛, 5/32, 3/16, 7/32, ¼ and 17/64-inch punches and dies. Packed in a substantial steel case.

No. O.X., Complete as Described	per set	**$7.85**
Extra Punches, 3/32, ⅛, 5/32, 3/16, 7/32, ¼, and 17/64-Inch	ea.	**.30**
Extra Dies, 3/32, ⅛, 5/32, 3/16, 7/32, ¼, and 17/64-Inch	each	**.30**

No. X. X. Parker-Kalon Metal Punches


HYRO
No X X METAL PUNCH

The No. X. X. Parker-Kalon Punch has a throat opening 3½ inches deep and 2⅛ inches high. It is wide enough to accommodate irregular shapes, forms and intricate sections.

Furnished complete with bench stand, gage, automatic stripper and one punch and one die, any stock size.

No. X. X. . . . each **$11.75**

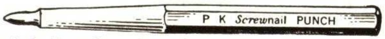
Extra Punches or Extra Dies

Stock sizes: 3/32, ⅛, 5/32, 3/16, 7/32, ¼, 9/32, 5/16, 11/32, ⅜, 25/64, 13/32, 7/16, 15/32, ½, and 17/32 inch.

Each . . . . **$.45**

Parker-Kalon Screwnail Punches

Stop Pattern

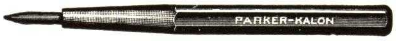


For use with hardened screwnails where the metal is so heavy that the screwnail will not pierce it easily.

Made of hardened steel.

No.	13	12	11	10
Each	$.30	.30	.30	.30
Screwnail Gage No.	13	12	11	10

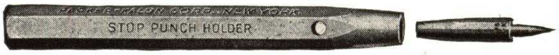
Parker-Kalon Stop Punches



Designed especially for use with hardened self-tapping sheet metal screws. The stop or shoulder prevents the punch from being driven too far. In 6 sizes—Nos. 6, 7, 8, 10, 12 and 14—for use with screws of corresponding diameters.

Each.. **$.30**

Parker-Kalon Stop Punch Holder and Stop Punch Bits



Stop Punch Holders

Takes all sizes of stop punch bits.

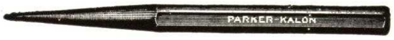
Each.. **$.40**

Stop Punch Bits

In 6 sizes Nos. 6, 7, 8, 10, 12 and 14, for use with screws of corresponding diameters.

Each.. **$.15**

Parker-Kalon Plain Punches

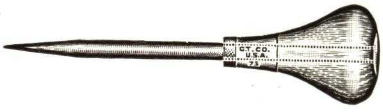


Designed especially for use with hardened self-tapping sheet metal screws where a pierced hole is practicable. Punches holes large enough for all diameters of screws to No. 14. Made from NE 9450 steel, in one size only.

Weight, 2½ ounces.

Each.. **$.20**

No. 73 Crescent Scratch Awls



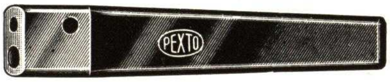
Blade, 3⅞ inches; length over all, 6⅞ inches. Natural finish, hard wood handle, polished blade.

Weighs 2⅔ ounces.

No. **73**..each **$.40**

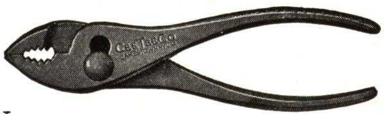
No. 46 Pexto Rivet Sets and Headers

Forged Steel—Polished Head and Black Shank



Nos. 00 to 2 packed two in box; smaller sizes, six in box.

Size No.	Each	Size Hole In.	Drill Gage No.	For Iron Rivets Lb.	For Copper Rivets No.	For Copper Rivets Diam. In.	Wt. Lb. per Doz.
00	**$1.00**	5/16	5/16	14	..	..	10½
0	**1.00**	9/32	9/32	10–12	5	¼	10½
1	**.90**	15/64	15/64	7–8	6	7/32	6¾
2	**.90**	.2130	3	6	7	3/16	6¾
3	**.80**	.1910	11	4–5	8	5/32	5
4	**.80**	.1660	19	2½–3	9	9/64	5
5	**.56**	.1495	25	1¾–2	10 and 11	⅛	5
6	**.56**	.1405	28	1½	12	7/64	2¾
7	**.50**	.1285	30	1¼	13	3/32	2¾
8	**.50**	.1100	35	10–12 oz.	14	3/32	2¾

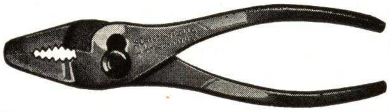


CeeTeeCo Combination Pliers

Nickel-plated finish.

No.	H25	H26	H28	H210
Each	**$.35**	**.35**	**.50**	**.70**
Size.....inches	5	6	8	10
Capacity.....inches	¾	1	1¼	1½
Weight.....ounces	3½	8	10	16

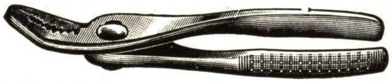
Crescent Thin Straight Nose Pliers



Made of alloy steel. Slip joint. Convenient for narrow places. Checker-dot handles, nickel plated.

No.	L25	L26	L28	L210
Each	**$.55**	**.55**	**.75**	**1.00**
Length.....inches	5	6	8	10

No. J26 Crescent Thin Bent Nose Pliers



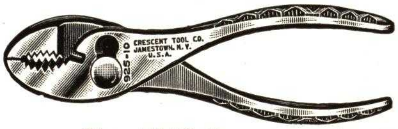
Made of alloy steel.

For use on check nuts and similar work. Has slip joint.

Size.....inches	6
No. J26, Nickel Plated.....each	**$.75**
Capacity.....inches	1

No. 925 Crescent Combination Pliers

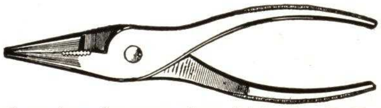
Slip joint. Made of special steel, hardened and oil-tempered. Chromium-plated finish.


925-10
CRESCENT TOOL CO.
JAMESTOWN, N. Y.
U.S.A.

Packed 1 in a box.

Size In.	Each	Cap. In.	Wt. Oz.
6	**$1.00**	1	9
8	**1.25**	1¼	12
10	**1.60**	1½	18

No. M16 Crescent Long Nose Pliers



Drop forged from special steel.

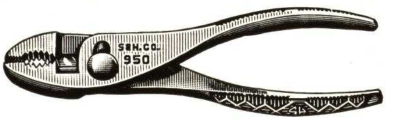
Equipped with a strong wire cutter that will cut with a clean break; capacity, ¾-inch. Full polished finish.

Packed 1 in a box. Weight 5 ounces.

No. M16, Size, 6 Inches..........................each **$.75**

No. 950 S & H Combination Side Cutting Pliers

Made of forged tool steel. Slip joint and pipe grip in jaw. No pinch. Knurled handles. Nickel plated.

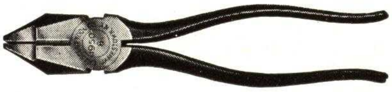


Packed 1 in a box.

Size..in.	5½	7
No. **950** ..each	**$1.25**	**1.50**
Weight Each ...oz.	5	8

No. 1950 Crestoloy Side Cutting Pliers

Extra Heavy

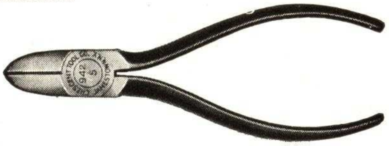


Forged high grade tool steel. Keen blades. Packed one in box.

Size.....inches	6	7	8
No. **1950**.....each	**$1.75**	**2.00**	**2.25**
Weight.....ounces	7	10	16

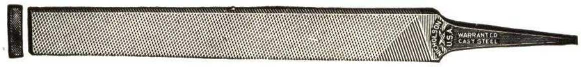
No. 942 Crestoloy Diagonal Cutting Pliers

Made of forged steel. Scientifically shaped knurled handles.



Size Inches	Each	Weight Oz.
4	**$1.35**	3
5	**1.50**	4
5½	**1.60**	5
6	**1.75**	6

Hand Files

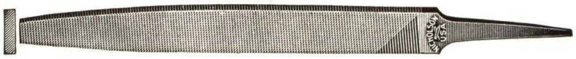


One safe edge.

Sizes 6 to 8-inch, 12 in box; 10-inch and larger, 6 in box.

Length.....inches	6	8	10	12	14	16
Bastard...per doz.	$4.30	$5.40	$7.50	$10.70	$15.00	$20.10
Second Cutperdoz.	5.10	6.30	8.70	12.30	17.00	.....
Smooth...per doz.	5.60	6.70	9.40	13.50	18.20	...
Width......inches	5/8	13/16	1	1 3/16	1 3/8	5/8
Thickness...inches	5/32	7/32	1/4	17/64	19/64	13/32
Wt., per Dozen. lb.	2 1/4	4 11/16	8 7/8	14 5/16	21 5/16	31 1/2

Flat Files

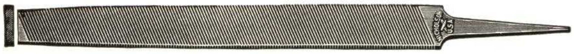

NICHOLSON U.S.A.

Sizes 4 to 8-inch packed 12 in a box; 10-inch and larger, 6 in a box.

Length........inches	4	6	8	10
Bastard....per dozen	$3.70	$4.30	$5.30	$7.00
Second Cut.per dozen	4.30	4.80	6.10	8.10
Smooth....per dozen	4.70	5.30	6.60	8.70
Approx. Size...inches	7/16x7/64	5/8x5/32	13/16x7/32	1x1/4
Approx. Weight..lbs.	9/16	1 5/8	3 5/8	7

Length........inches	12	14	16	18
Bastard....per dozen	$9.70	$13.30	$17.80	$23.90
Second Cut.per dozen	11.00	15.30	20.10	......
Smooth....per dozen	12.10	16.70	22.30	......
Approx. Size...inches	1 3/16x17/64	1 3/8x19/64	1 17/32x11/32	1 23/32x23/64
Approx. Weight..lbs.	11 9/16	18 1/2	27 1/16	36 1/2

Mill Files


NICHOLSON U.S.A.

Single cut files, tapered slightly in width and thickness for about a third of their length. Usually made with two square edges.

Lgth. In.	Dimen. Inches	No. in Box	Approx. Wt., Lb. per Dozen	Lgth: In.	Dimen. Inches	No. in Box	Approx. Wt., Lb. per Dozen
4	7/16x5/64	12	3/8	10	1 x3/16	12	5 1/4
6	5/8x1/8	12	1 3/16	12	1 3/16x7/32	6	9 1/16
7	45/64x1/8	12	1 15/16	14	1 3/8x1/4	6	13 1/8
8	13/16x5/32	12	2 11/16	16	1 17/32x9/32	6	20 5/8

Bastard

Length.....in.	4	6	7	8	10	12	14	16
Per Dozen.....	$3.00	3.50	3.90	4.30	5.60	7.50	10.70	14.70

Second Cut

Length............inches	6	8	10	12	14
Per Dozen...............	$4.00	4.90	6.40	8.60	12.20

Smooth

Length............inches	6	8	10	12	14
Per Dozen...............	$4.50	5.40	7.00	9.40	13.10

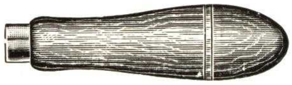
Two Round Edges—Bastard

Length..........inches	6	8	10	12
Per Dozen............	$4.40	5.40	7.00	9.40
Dimensions.....inches	5/8x1/8	13/16x5/32	1x3/16	1 3/16x7/32

Blunt—Bastard

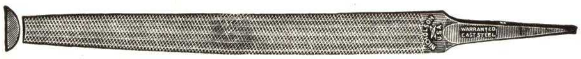
Length......inches	6	7	8	10	12
Per Dozen.........	$3.90	4.30	4.90	6.70	9.40
Dimensions..inches	5/8x1/8	45/64x1/8	13/16x5/32	1x3/16	1 3/16x7/32

Plain File Handles



Size No........................	1	2	3	4	5
Per Gross......................	..	...	...	...	...
Diameter..................inches	3/4	1 5/16	1 1/8	1 1/4	1 3/8
Length....................inches	3	3 3/4	4 1/8	4 1/2	5

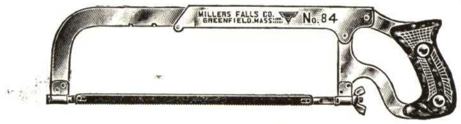
Half-Round Files



Sizes 4 to 8-inch, 12 in box; 10-inch and larger, 6 in box.

Length..in.	4	6	8	10	12	14	16
Bastard .per doz.	$4.80	$6.10	$7.50	$9.10	$11.80	$15.50	$20.60
Second Cut .per doz.	5.60	6.70	8.30	10.10	13.00	17.00	22.50
Smooth .per doz.	6.10	7.10	8.90	10.70	13.90	18.30	24.20
Width...in.	7/16	5/8	3/4	15/16	1 1/8	1 5/16	1 1/2
Thickness ......in.	1/8	5/32	7/32	9/32	11/32	13/32	29/64
Approx. Wt., per Doz. lb.	5/8	1 7/16	3 1/8	5 13/16	9 7/8	16	22 3/4

No. 84 Millers Falls Hack Saw Frames

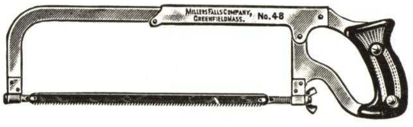

MILLERS FALLS CO. GREENFIELD, MASS.
No. 84

Frame made of steel 3/16 inch thick by 13/16 inch wide; back of hard, tough steel 1 1/16 inch thick. Rear portion of frame stamped from 3/16-inch steel affords rigid support for handle. One 10-inch Blu-Mol molybdenum blade regular equipment. Bright red transparent handle of Tenite is unbreakable and non-inflammable. Frame easily adjustable for 8 to 12-inch blades which are held by round studs with heavy pins set in clips that permit facing blade in 4 directions. Large wing nut at rear. Depth of frame 3 1/4 inches. Polished, heavily nickel-plated, and buffed.

Weight, 1 pound 15 ounces.

No. **84**......................................each **$3.50**

No. 48 Hack Saw Frames

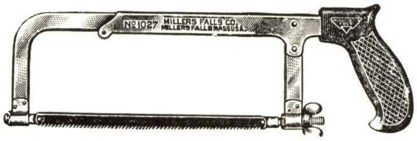

MILLERS FALLS COMPANY, GREENFIELD MASS.
No. 48

Checked composition pistol grip handle. Equipped with one 10-inch blade.

Capacity 8-12 inches. Depth 3 1/4 inches. Weight 1 3/4 lbs.

No. **48**......................................each **$2.40**

No. 1027 Millers Falls Hacksaw Frames


No 1027 MILLERS FALLS CO. MILLERS FALLS MASS U.S.A.

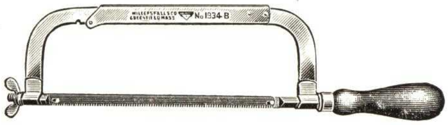
Pistol grip hacksaw frames give a comfortable grip.

Adjustable from 8 to 12 in.

Finely polished, nickel plated and buffed. Packed 1 in a box. Weight, 1 3/4 lb.

No. **1027**, with One 10-Inch Blade ....each **$1.80**

No. 1934B Millers Falls Hack Saw Frames


MILLERS FALLS CO. GREENFIELD MASS
No. 1934-B

Quickly and easily adjustable for 8 to 12-inch blades which can be faced in any one of four directions. Blade tension is secured by means of the wing nut on the outer stud. Studs and clips are square, keeping blade in close alignment with the frame. Frame is round edge steel 11/16-inch wide and 3/16-inch thick; back is of hard, tough steel 1/16-inch thick. Throat, 3 inches.

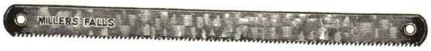
Finished in black ebonite. Hardwood handle is mahogany lacquered.

Packed 2 frames in a box. No blades are supplied.

Weight each, 1 1/8 pounds.

No. **1934B**......................................each **$1.00**

Millers Falls Hacksaw Blades



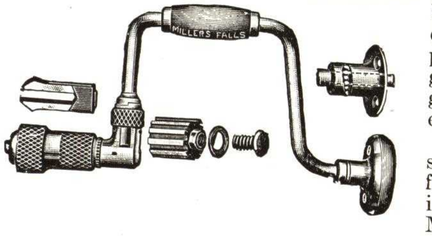
Made of fine quality tungsten steel, heat treated for maximum service.

Length.........................inches	10	12
All Hard....................per gross	$10.00	$12.00
Flexible....................per gross	10.00	12.00

Millers Falls Ratchet Bit Braces

Has tropical hardwood head and handle.

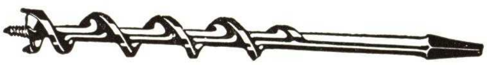
Exposed metal parts nickel plated and buffed. Has Lion ball bearing chuck. Jaws have parallel milled grooves which grip along their entire length. Holds bit shanks, round from ⅛ to ½ inch and No. 1 Morse taper shanks.



Boxed ratchet. Packed 2 in a box.

No................................	770	771	772
Each................................	$6.70	6.60	6.40
Sweep.......................inches	14	12	10
Weight per Box.............pounds	8	7	6¾

No. 62T Mainbor Auger Bits



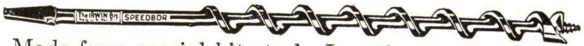
Special bit steel; heads heat treated; smooth finish.

Sizes 4/16 to 16/16 packed 6 in a box; larger sizes 3 in a box.

Size in 16ths Inches	Per Dozen	Wt. Lb. Per Dozen	Size in 16ths Inches	Per Dozen	Wt. Lb. Per Dozen	Size in 16ths Inches	Per Dozen	Wt. Lb. Per Dozen
4	$4.00	1	11	$7.00	3	20	$12.00	8
5	4.00	1	12	7.00	4	22	13.50	9
6	4.00	1	13	8.00	4	24	15.00	10
7	4.50	2	14	8.00	4	26	17.00	10
8	5.00	2	15	9.00	5	28	19.00	12
9	5.50	2	16	9.00	6	30	21.00	12
10	6.00	3	18	10.50	6	32	23.00	12

No. 3-E Irwin Speedbor Electricians' Bits

Brace Chuck Shank

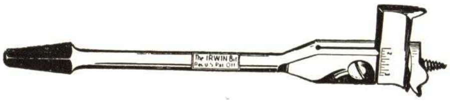


Made from special bit steel. Length overall, 10 inches. Length twist, 6 inches.

Packed 6 in a box.

Size...................16ths of an inch	10	11	12
No. 3-E.......................per dozen	$7.20	7.20	7.20
Weight per Dozen..............pounds	3	3½	3½

Irwin Expansive Bits



This bit eliminates loose plates and holds the blade in a solid clamping device which is part of the head.

Made of special steel, heat treated; blades are tempered.

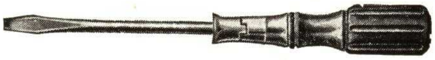
Packed 1 in a box; 6 in a carton.

No. 1, Cuts ⅝ to 1½ In., Wt. 4½ Lb.	per doz.	$15.80
No. 2, Cuts ⅞ to 3 In., Wt. 6¼ Lb.	per doz.	18.40

Extra Blades

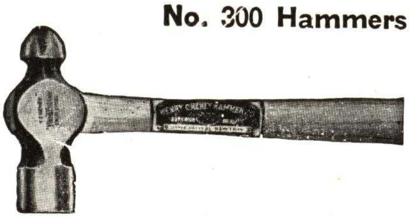
No...............................	1	2	3	4
For No. 1 Expansive Bit..per doz.	$3.00	$3.75	....	....
For No. 2 Expansive Bit..per doz.	....	....	$5.25	$6.00

Screwdrivers



Length of Blade Inches	Price per Dozen	Length of Blade Inches	Price per Dozen	Length of Blade Inches	Price per Dozen
3	$3.50	5	$5.00	8	$8.06
4	4.25	6	6.00	10	10.00

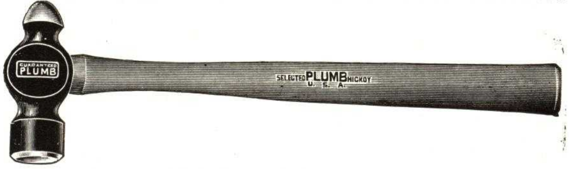
No. 300 Hammers



Weight Pounds	Weight Ounces	Price Each
..	8	$1.20
..	12	1.30
1	0	1.40
1	4	1.50
1	8	1.60
1	12	1.70
2	0	1.80

Plumb Machinists' Ball Pein Hammers

Hand Forged—Smooth Black Finish—Red Handle


GUARANTEED PLUMB
SELECTED PLUMB HICKORY U. S. A.

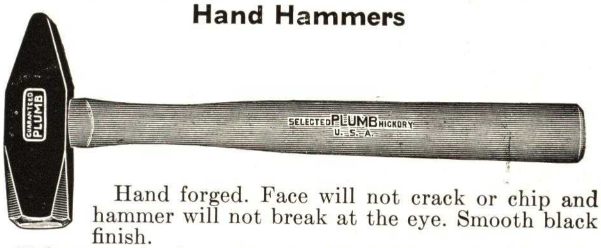
Handle made of selected hickory.

Plumb patented take-up wedge keeps handle tight.

Packed 6 in box. Weight does not include handle.

No.	Each	Size	Wt. Lb.	No.	Each	Size	Wt. Lb.
367	....	7/0	⅛	374	....	1	1¼
369	....	5/0	¼	375	....	2	1½
371	....	3/0	½	377	....	4	2
372	....	2/0	¾	379	....	6	2½
373	....	0	1	381	....	8	3

Plumb Engineers' and Blacksmiths' Hand Hammers


GUARANTEED PLUMB
SELECTED PLUMB HICKORY U. S. A.

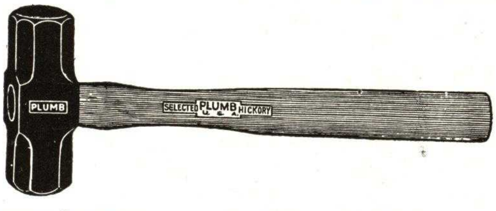
Hand forged. Face will not crack or chip and hammer will not break at the eye. Smooth black finish.

Take-up wedge keeps handle tight. Mahoganized handle, red finish.

Packed 6 in a box. Weights do not include handle.

No................................	281	282	283
Each..............................	....	....	....
Size No...........................	1	2	3
Weight..................pounds	2	2½	3

Plumb Engineers' Double Face Hammers

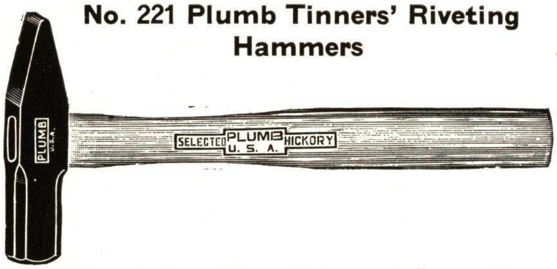


A heavy hammer, correctly balanced. Made of special analysis steel tempered to eliminate mushrooming. Has smooth black head and take-up wedge. Red handle of second growth hickory shaped for hand comfort.

Packed 6 in a box. Weights do not include handles.

No..	272	273
Size No....................................	2	3
Weight.............................pounds	2½	3

No. 221 Plumb Tinners' Riveting Hammers


PLUMB
U.S.A.
SELECTED PLUMB U. S. A. HICKORY

Hand forged of special analysis steel. Large oblong eye gives strength to handle at weakest point. Black finish.

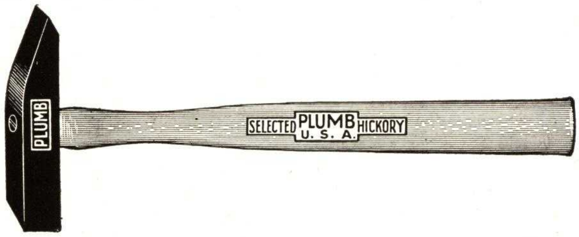
Take-up wedge keeps handle tight.

Handle made of second growth hickory, red finish.

Packed 6 in a box. Weight does not include handle.

Size No.		2
No. **221**	each	....
Weight	pounds	¾

No. 231 Plumb Tinners' Paneing Hammers


PLUMB
SELECTED PLUMB U. S. A. HICKORY

Hand forged. Made with large oblong eye. Black finish. Take-up wedge keeps handle tight.

Fitted with handle made of second growth hickory, mahogany stained, red finish.

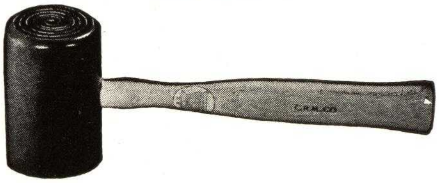
Available in Size No. 2.

Packed 6 in a box.

Weight, not including handle, 12 ounces.

Chicago Rawhide Mallets

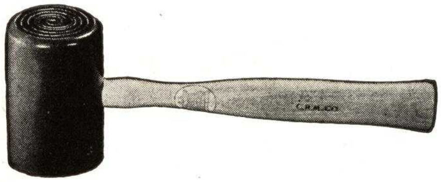
Not Loaded



Has solid rawhide head, hardwood handle. Rawhide being a non-conductor of electricity, it is adapted to electrical work. Used where repairs to machinery are made.

No.	0	1	2	3	4	5	6
Per Dozen	**$7.92**	**9.60**	**11.16**	**12.72**	**16.08**	**35.64**	**40.32**
Handles Per doz.	**1.50**	**1.50**	**1.50**	**1.50**	**1.50**	**1.50**	**1.50**
Diameter.....in.	1	1¼	1½	1¾	2	2¾	2¾
Length.......in.	2⅛	3	3¼	3¼	3½	4¼	4¾
Weight......oz.	2	3½	6	7½	10	21	23

Loaded Rawhide Mallets

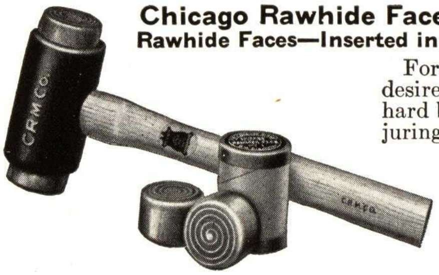


Made with lead core to give additional weight.

No.	7	8	9	10	11
Per Dozen	**$11.28**	**12.60**	**14.52**	**18.12**	**40.20**
Handles.....per dozen	**1.50**	**1.50**	**1.50**	**1.50**	**1.50**
Diameter.......inches	1¼	1½	1¾	2	2¾
Length.........inches	3	3⅛	3⅜	3½	4¼
Weight.........ounces	8	12	16	20	42

Chicago Rawhide Faced Hammers

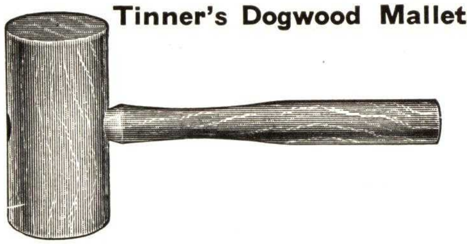
Rawhide Faces—Inserted in Malleable Iron


C.R.M.CO.
C.R.M.CO.

For use where it is desired to strike a hard blow without injuring delicate surfaces. Metal part is practically indestructible and rawhide face is renewable.

No.	Per Doz.	**Hdles.** per Doz.	**Faces** per Doz. Pr.	Diam. In.	Wt. Lb.
0	**$16.20**	**$2.00**	**$5.64**	1	½
1	**18.96**	**2.00**	**6.00**	1¼	1⅛
2	**24.12**	**2.00**	**7.20**	1½	1⅝
3	**28.80**	**2.00**	**9.12**	1¾	2¼
4	**41.76**	**2.00**	**15.84**	2	4
5	**52.80**	**2.00**	**22.44**	2¾	5½

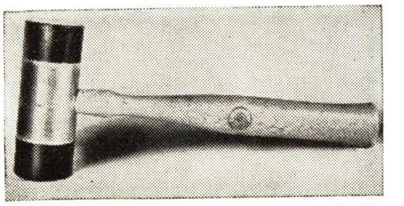
Tinner's Dogwood Mallets



Dogwood is exceptionally tough and of fine grain. Hardwood handle and varnished head.

Number		**1**	**2**	**3**	**4**
Per Dozen		....	....	....	....
Length Head	inches	6½	6	5½	5
Diameter Face	inches	3½	3	2½	2
Length Handle Over All	inches	....	11½	11	11
Handle Projects Out of Head	in.	....	8¾	8½	8½
Net Weight	ounces	....	25	18	12

Nupla Flex-O-Cryst Plastic Hammers



A durable hammer of semi-soft sheet and other plastic for use on wood and metals—aluminum, dural, tool and die work. For machinists, mechanics, sheet metal workers and toolmakers.

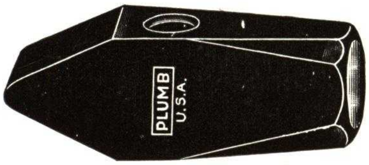
Elasticity and resiliency prevents marring or otherwise impairing material on which it is used. No sting or vibration. Not affected by gasoline, oil, etc. To renew worn ends of hammer head, trim with band saw and polish edges lightly.

Available in three types of hardness: Type A (Red) medium hard, for general machine shop, Type B (Green) extra hard, hardened for heavier work and Type XX (Amber) special soft for furniture, cabinet, interior auto body and glass work. Specify grade.

All Purpose					**Heavy Duty**				
No.	Each	Head Diam. Inches	Head Length Overall Inches	Weight Ounces	No.	Each	Head Diam. Inches	Head Length Overall Inches	Weight Pounds
50	**$1.50**	1	3⅜	5	**57**	**$4.00**	1⅞	4⅜	2
51	**1.50**	1	3⅜	8	**58**	**4.80**	1⅞	5¼	1¼
52	**2.50**	1⅜	4	8	**59**	**4.80**	1⅞	5¼	1½
53	**2.50**	1⅜	4	17	**60**	**4.80**	1⅞	5¼	3
54	**3.50**	1⅞	4⅜	15	**61**	**7.00**	2⅜	5¼	1¾
55	**3.50**	1⅞	4⅜	24	**62**	**7.00**	2⅜	5¼	3
56	**3.50**	1⅞	4⅜	32	**63**	**7.80**	2⅜	5¾	4
..	....	...	...	..	***64**	**10.00**	3	6¼	3
..	....	...	...	..	***65**	**11.00**	3	6¼	6

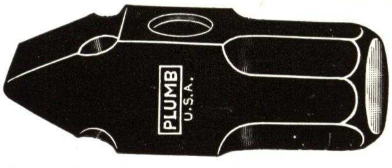
*Extra tips $3.70 each; 2 required per hammer.

No. 1100 Blacksmiths' Steel Hand Hammer



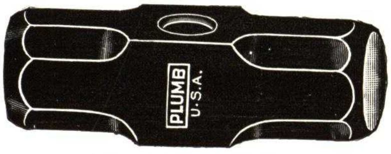
Wt. Lb.	Length Inches
2	4½
2½	4¾
3	5
4	5½

No. 1030 Plumb Cross Pein Blacksmiths' Steel Sledges



Weight Pounds	Each
6	....
8	....
10	....
12	....
16	....

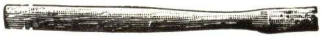
No. 1060 Plumb Double Face Blacksmiths' Steel Sledges



Black, non-rusting finish.

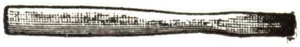
Available in the following weights: 2½, 3, 4, 6, 8, 10, 12, 16 and 20 lb.

Machinists' Hammer Handles



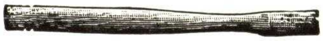
Length......inches	12	14	16	18	20	22	24
Extra Grade....per doz.	....	....	....	....	....	....	....
No. 1 Grade....per doz.	....	....	....	....	....	....	....

Adze Eye Hammer Handles



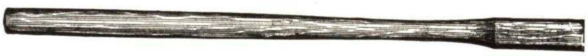
Length.......inches	12	14
Extra Grade.......per dozen	.....	.....
No. 1.......per dozen	.....	.....

Riveting Hammer Handles



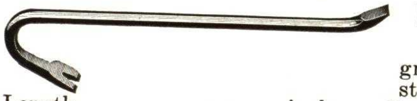
Length Inches	Price, per Dozen Extra Grade	Price, per Dozen No. 1	Length Inches	Price, per Dozen Extra Grade	Price, per Dozen No. 1
12	....	....	20	....	....
14	....	....	22	....	....
16	....	....	24	....	....
18	....	....		....	....

Sledge Handles



Length Inches	Price, per Dozen Extra Grade	Price, per Dozen No. 1	Length Inches	Price, per Dozen Extra Grade	Price, per Dozen No. 1
24	....	....	32	....	....
28	....	....	34	....	....
30	....	....	36	....	....

No. 354 Hubbard Carpenters Goose Neck Ripping Bars



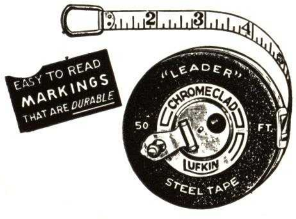
Forged from best grade octagon bar steel, black finish.

Length.......inches	12	24	30	36
No. 354.......each	....	....	....	....
Octagon Size.......inches	½	¾	¾	¾
Weight.......pounds	....	....	....	....

Lufkin Leader Chrome Clad Steel Tapes

Accurate steel tape, chrome plated. Markings durable as well as extra legible. Measurements easy to read, even in poor light, markings being jet black on satin chrome-white surface, free of glare. The hard chrome surface resists both rust and wear, is smooth and easy to clean. Thus built up, of metal throughout, this tape will not crack, chip or peel, and is extra strong.

The ⅜-inch tape line is marked in feet, inches and eighths.

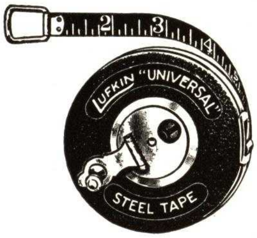


Black imitation leather case, metal lined; winding handle opened by push pin.

Packed 1 in a box.

No.	Each	Lgth. Ft.	Wt. Oz.
C250	$4.90	25	9
C253	6.00	50	15
C255	8.10	75	20
C256	10.20	100	25

Lufkin Universal Steel Tapes



The steel line is of standard weight, ⅜ inch wide, clearly marked and has instantaneous readings and Nubian finish.

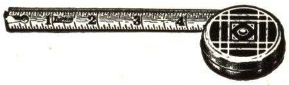
The case has flat, flush, nickel-plated edge band 3/16-in. wide. Case is metal-lined, covered with black imitation leather. Folding flush handle is opened by pressing pin on opposite side. All trimmings are nickel-plated.

Tape marked feet, inches and 8ths, one side only.

Packed 1 in a box.

No.	540	543	545	546
Each	$4.30	4.90	6.70	8.30
Length.......feet	25	50	75	100
Weight.......ounces	6	10	15	17

No. 186 Lufkin Aristocrat Tape-Rules



Marked one side only. Steel line can be projected unsupported like a rule to walls or into openings. Will also flex around and accurately measure circles, etc. Hook at first end is ideal for hooking over objects.

Blade is 7/16-inch in width.

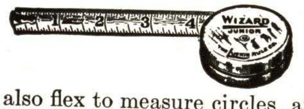
Stainless steel case 1⅝ inches in diameter; both sides have embossed design with background in black enamel.

Packed one in a box; 6 in a carton. Weight, 2 ounces.

No. **186**, 72-Inch, Marked Consecutive Inches to 16ths on both edges (First 6 inches on upper edge to 32nds) ea. **$1.50**

No. **186**D, 6-Ft., Upper Edge, Marked Ft., 10ths and 100ths of Ft.; Lower Edge, Ft., In and 16ths...each **1.75**

Lufkin Wizard Junior Tape-Rules



Nickel plated steel blade, ½ inch wide, is stiffened by concave forming so it can be projected unsupported. Will also flex to measure circles, around corner, etc. Solid hook is for measuring within or beyond arm's reach.

Nickel plated case, 1⅞ inches in diameter, encloses blade. Rounded corners and ribbed at bottom to stand on edge.

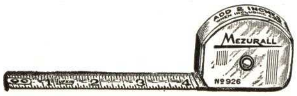
Nos. **1686** and **1688** are marked on one side in inches to 16ths on both edges. First 6 inches of upper edge to 32nds.

No. **1686D** is marked on one side in feet, 10ths and 100ths on upper edge. Inches and 16ths on lower edge.

Packed one in a box; 6 in a carton.

No.	1686	1688	1686D
Each	$.85	1.40	1.10
Length	72 in.	96 in.	6 ft.
Weight, per Dozen.......lb.	2¼	2½	2¼

Lufkin Mezurall Tape-Rules



For all inside and outside, height and depth flexible and rigid measurements.

The nickel-plated, ½-inch wide blade is manually operated. The blade remains set at any length withdrawn.

Adjustable end hook. Allows accurate measurements, either hook or butt end. Case is nickel-plated; 9/16-inch thick and 2 inches wide, fully enclosing blade. Case will stand unsupported in 3 measuring positions.

Blade marked in inches to 16ths; first 6 inches upper edge to 32nds. Packed 1 in a box; 6 in a carton.

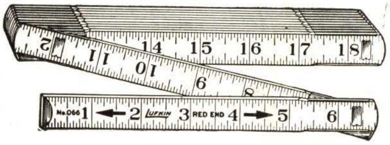
Weight, 3 ounces.

No. **926**, 72-Inch, Blade Marked One Side	each	**$1.25**
No. **928**, 96-Inch, Blade Marked One Side	each	**1.65**

Lufkin Red End Spring Joint Rules

6-Inch Folds—⅝-Inch Wide

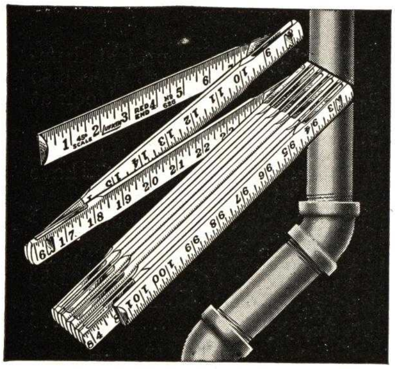
Lock joints and strike plates of solid brass. The white enamel is as near snow white as it is possible to obtain. Gloss finish.



Marked consecutive inches to 16ths, both edges, both sides. Can be furnished with the patent folding hook. Packed 6 in box.

No.	**064**	**065**	**066**	**068**
Per Dozen	**$5.60**	**6.90**	**7.80**	**10.80**
Length, feet	4	5	6	8
Weight per Dozen, pounds	2¼	2¾	3½	4¼

No. 626 Lufkin Plumbers' and Steamfitters' Red End Rules



Specially marked for pipefitting work. Also suitable for general measuring.

Bears standard measurements in black. Corresponding 45° lengths in red.

Has solid brass strike plates and joints, rustproof, smooth working. Lock joints reduce end play, maintain accuracy.

Sections are of hardwood, straight grain, tough, flexible.

Snow-white enamel finish. Ends in bright, gloss red.

Packed 6 in a box.

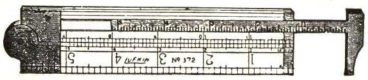
Weight per dozen, 3½ pounds.

No. **626**, 6-Foot Rule.................per dozen **$9.00**

No. 372 Lufkin Boxwood Caliper Rules

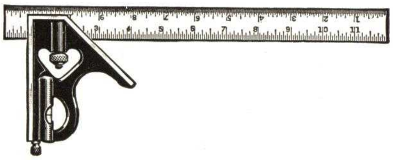
1 Foot—2 Fold—Unbound

A sturdy rule, 1⅜ inches wide. Square joint. Brass bit plate. Graduated in 8ths, 10ths, 12ths, and 16ths; caliper, 16ths and 32nds. Packed 6 in box. Weight per dozen, 1¾ pounds.



No. **372** (36½)..................per dozen **$12.10**

No. 1200 M-S Squares



This combi tion square is ted with a 12-in steel blade, 1 in wide. The figu are large and cle and the graduati lines deeply etch not stamped. Graduated on one side in 8ths and 16ths, a 16ths and 32nds on the other. The beam is 4 inches lo black enameled except for the bearing surfaces which carefully machined. The beam is equipped with a cat's level and a scriber. Knurled clamp nut finished in enamel.

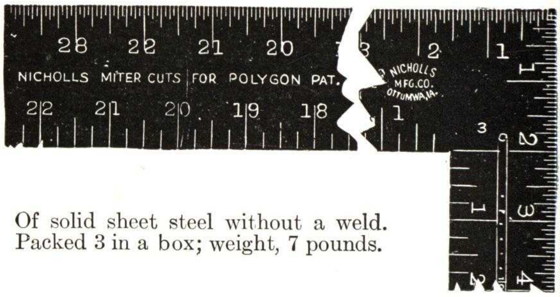
Weight 15 ounces.

Packed one in a box.

No. **1200**..................................each **$1**

Eureka Standard Steel Squares

Polished


NICHOLLS MITER CUTS FOR POLYGON PAT.
NICHOLLS MFG. CO. OTTUMWA, IA.

Of solid sheet steel without a weld.
Packed 3 in a box; weight, 7 pounds.

No.	Body Inches	Tongue, Inches Width	Tongue, Inches Leng
100	24x2	1½	16–
14	24x2	1½	16–
18	18x1½	1	1

No.	How Marked Face	How Marked Back	Kind of Measure	Per Doz. Polished S
100	1/16, ⅛	1/32, 1/12, 1/10	Essex's Board Measure, Brace, Octagon, and 1–100 Scale, and mitre Cuts for Polygon	**$25.2**
14	⅛, ¼	¼, ¼	Board Measure	**20.3**
18	1/16, ⅛	1/12, ⅛		**20.3**

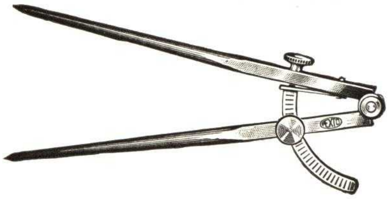
Flat Steel Squares

Polished

Packed 6 wrapped in paper; weight, 11 pounds.

No.	Body In.	Tongue, In. Width	Tongue, In. Length	How Marked Face	How Marked Back	Per Do
700	24x2	1½	12	⅛	⅛	**$9.9**

No. 35 Pexto Wing Dividers



Made of forged steel. Well polished.

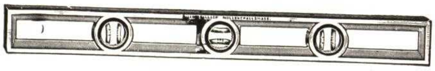
Hardened points.

Wings are knurled to hold special point on thumb scre

Packed 6 in a box.

Size, inches	**6**	**8**	**10**	**12**
No. **35**, per dozen	**$12.44**	**15.50**	**20.90**	**24.**
Weight per Dozen, pounds	3½	4½	8	10

Millers Falls Carpenters Aluminum Levels



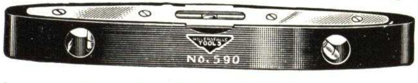
The frame of this level is cast aluminum designed to give strength and rigidity with minimum weight. Round white openings with glass protection for vials, giving clear vision and luminosity.

Leveling surfaces, ends and round vial rims finished in red.

The No. 1018 has 2 plumbs and 2 levels; others have 4 plumbs and 2 levels.

No.	**1018**	**1024**	**1028**	**1030**
Each	**$3.50**	**3.65**	**4.60**	**4.85**
Size......in.	18x2¼x1⅛	24x2¼x1⅛	28x2¼x1⅛	30x2¼x1⅛
Ship. Wt..lb.	1¾	2	2½	2¾

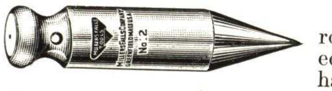
No. 590 Millers Falls Torpedo Levels



Body is die cast, glossy black bakelite. Top plate is a heavy piece of polished nickeloid, set flush with body. Provided with two plumbs, one 45 and one 90 degrees, and one level vial, all of the cat's-eye type. Bottom has v-groove running entire length. Packed 1 in box. Weight, 5 oz.

No. **590**, Dimensions, 9x1¼x¾ Inches..........each **$1.50**

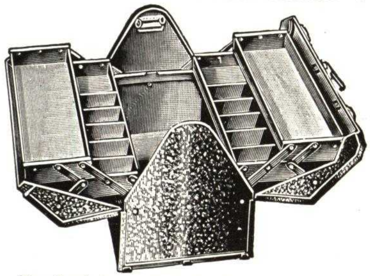
Millers Falls Plumb Bobs



Machine turned from cold rolled steel, nickeled, polished and buffed. Points are hardened.

No.	**1**	**2**	**3**	**4**
Nickel Plated..........each	**$.30**	**.40**	**.60**	**.75**
Length..........inches	2¾	3½	4	5
Weight per ½ Dozen......pounds	1⅛	2¼	3	3½

No. 1018 Kennedy All Steel General Mechanics' Kits

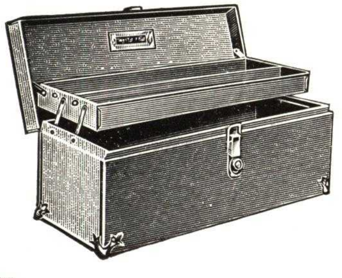


The four trays swing out of kit when lids are opened. Leather handle; fastened with draw bolt hasp and staple. Three skid rails welded to bottom. Seal brown ripple baked enamel finish outside, dark green smooth baked enamel inside.

Packed in individual cartons, 6 in a crate.

No. **1018**..........each	**$8.40**
Dimensions..........inches	18x10x12½
Net Weight..........pounds	17½
Shipping Weight per Crate..........pounds	125

Kennedy Bighorn Steel Tool Kits



Tray is automatically lifted out with the opening of the lid and it rests firmly when extended.

Has draw bolt hasp and staple.

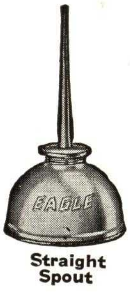
Double seamed ends, corner irons and full length hinge.

Marproof green baked ripple enamel finish.

Packed 6 to a carton.

No.	**CS16**	**CS19**
Each	**$3.14**	**3.36**
Dimensions..........inches	16x7x7	19x7x7
Weight..........pounds	5⅝	7 1/16
Weight per Crate..........pounds	50	55

Eagle Copper-Plated Steel Oilers



Straight Spout

Made from high grade cold rolled steel with spring steel bottom; seamless drawn steel body, collar included, all one piece; heavy rolled threads; bottom double seamed; heavily electro copper-plated.

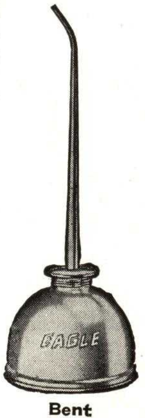
Mouth opening is 1⅜ inches wide.

All spouts are interchangeable.

The 3 and 5-inch spouts are straight; 9-inch spouts furnished bent unless otherwise specified.

Reinforced insert spouts.

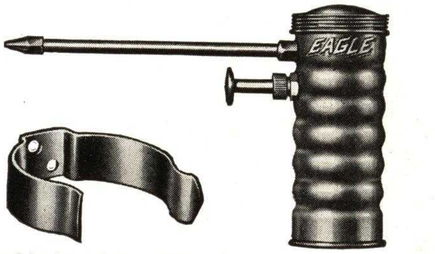
Packed one dozen in a carton.



Bent Spout

No.	Per Dozen	Extra Spouts Per Dozen	Capacity Pints	Length Spout Inches	Diameter at Bottom Inches	Height to Top of Collar Inches	Height Over-all Inches	Wt. Lb. per Doz.
12	**$4.50**	**$2.75**	¼	3	2⅞	1⅞	5½	2¼
13	**5.50**	**2.75**	⅓	3	3½	2⅛	5⅝	2¾
13A	**6.00**	**3.25**	⅓	5	3½	2⅛	6¾	3
14	**6.50**	**4.25**	⅓	9	3½	2⅛	10⅝	3½
14A	**7.50**	**2.75**	½	3	4	2⅝	6	4
14AA	**8.00**	**3.25**	½	5	4	2⅝	7¼	4¼
14B	**8.50**	**4.25**	½	9	4	2⅝	11¼	4½
15	**9.25**	**2.75**	1	3	4 5/16	3¼	6⅞	5
15A	**9.75**	**3.25**	1	5	4 5/16	3¼	7¾	5¼
16	**10.50**	**4.25**	1	9	4 5/16	3¼	11⅞	5½

No. 66 Eagle Super Oilers



For general industrial and home use.

Delivers one drop or a full stream of oil. Will discharge oil a distance of ¼ inch or 25 feet. The flow of oil is controlled by a mechanically operated brass plunger located in a position that enables operator to use the index finger. The operation of the plunger does not hide operator's view in close places and does not rock the spout at the tip end.

Has seamless detachable brass spout, all brass polished finish.

The beaded body offers a firm comfortable grip and prevents the oiler from slipping, making it easy to control flow of oil when oiling in close quarters or at a distance.

No.	**66**	***66C**
Per Dozen	**$15.00**	**$15.60**
Extra Spouts..........per dozen	**5.00**	**5.00**
Capacity..........ounces	5½	5½
Length Spout..........inches	4¾	4¾
Height Overall..........inches	4⅞	4⅞
Diameter Filler Opening..........inches	1⅝	1⅝
Weight per Dozen..........pounds	6	6⅜

*With C-clip holder.

C-Clip Holders

May be easily fastened to any work bench or wall.

Weight per dozen, ⅜ pounds..

Per Dozen.. **$.60**

Eagle Improved Hydraulic Pump Oilers

For use by mechanics, millwrights, farmers and service station attendants. Used in mills, mines, factories and foundries for shafting, conveyors, presses, shop equipment, harvesting machinery, tractors, trucks, automobiles, and for all general machine shop use.

Constructed with seamless drawn steel body, genuine double seamed bottom, and a welded steel spout with an extended steel thread protector. The steel spout is detachable.

Pumps any oil that will flow. Will deliver oil in a full stream or one drop under perfect control, the quantity controlled by the pressure exerted on the thumb lever. The position of the one-piece handle and the thumb lever enables the operator to force oil in any angle from any position with the least effort.

Oiler is coppered finish. Has brass couplings with machine cut threads, and a machined and ground brass plunger. Ball valves.

Positive in its action, easy to operate and easy to clean. Packed 6 in a carton.

With Upright Spouts

No.	Per Dozen	Extra Spouts per Dozen	Cap. Pts.	Length Spout In.	Dia. In.	Height Over-all In.	Wt. Per Doz. Lb.
27	**$12.00**	**$2.40**	¾	6	3	10½	11¼
279	**13.20**	**3.60**	¾	9	3	13½	11½
28	**18.00**	**3.60**	1	9	3⅝	14¼	15½
2815	**19.20**	**4.80**	1	15	3⅝	20½	17
29	**22.80**	**3.60**	2	9	4¼	15½	18½
2915	**24.00**	**4.80**	2	15	4¼	21½	19½

With 50° Angle Spouts

No.	Per Dozen	Extra Spouts per Dozen	Cap. Pts.	Length Spout In.	Dia. In.	Height Over-all In.	Wt. Per Doz. Lb.
27A	**$12.00**	**$2.40**	¾	6	3	7½	11¼
279A	**13.20**	**3.60**	¾	9	3	9	11½
289A	**18.00**	**3.60**	1	9	3⅝	10	15½
2815A	**19.20**	**4.80**	1	15	3⅝	14	17
299A	**22.80**	**3.60**	2	9	4¼	11	18½
2915A	**24.00**	**4.80**	2	15	4¼	15	19½

Justrite Oily Waste Cans

For safe handling of waste, rags and other flammable materials.

Approved and labeled by Underwriters', and Factory Mutual Fire Insurance Companies.

Body of 24-gage galvanized sheet steel, cover of No. 22 gage. The 4-inch legs and the handles are of ⅛-inch band iron 1 inch wide.

With Foot Lever

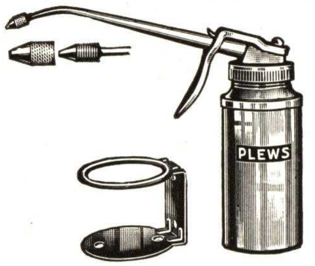
With Foot Lever

No.	Each	Size In. Excl. of Legs	Nom. Cap. Gal.	Ship. Wt. Lb.
9–1	**$5.40**	11¾x13	6	14
9–2	**6.00**	12½x14	8	15
9–3	**6.80**	13½x15	10	17
9–5	**8.00**	15½x17	14	21

Without Foot Lever

No.	Each	Size In. Excl. of Legs	Nom. Cap. Gal.	Ship. Wt. Lb.
9–1–A	**$4.80**	11¾x13	6	12
9–2–A	**5.40**	12½x14	8	13
9–3–A	**6.20**	13½x15	10	15
9–5–A	**7.40**	15½x17	14	19

Plews Force Feed Pistol Oilers



Capacity, 6 Ounces

Will project oil a distance of 15 or 20 feet.

Constructed of metal. No leather plungers or valves. Polished nickel finish.

Length spout, 6 inches.

Height oiler, 5 inches.

Weight per dozen, 9 lbs.

Description		Price
No. **100**, Forged Brass Cap, with Holder, Double-Tip Vent, Packed 1 in a box	per doz.	**$18.00**
No. **1100**, Pressed Steel Cap, with Holder, Double-Tip Vent, Packed 1 in a box	per doz.	**16.20**
No. **1105**, Single Cone Tip on Spout, No Holder, Copper Plated Finish, Indiv. Wrapped	per doz.	**12.00**

No. 1125 Plews Pistol Oilers

This oiler is a favorite with the mechanic who has to use an oiler frequently.

The outer cone-tip on this oiler has a small orifice to project a fine stream of oil. The inner tip has a larger aperture if a heavier discharge is desired. Will project oil 10 or 15 feet. All parts are of brass or steel.

Capacity, 1 pint. Has 6-inch double-tipped spout. Nickel-plated finish. One in a carton.

Shipping weight per dozen, 11 pounds.

Item		Price
No. **1125**	each	**$1.75**
Holder for No. **1125**	each	**.20**

Justrite Safety Cans

½ and 1 Gallon

2, 3, and 5-Gallon with Screen

For using, handling and storing gasoline, benzine and other explosive or flammable liquids. Non-explosive. Approved, inspected and labelled by Underwriters' Laboratories and Factory Mutual Fire Insurance Companies.

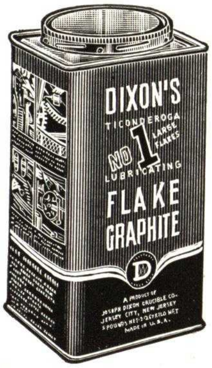
Made of 24-gage steel, lead coated. Large nozzles, easy to fill. No-spill pouring lip. Balanced for easy carrying. Sizes 1-pint to 1-gallon with trigger handle; 2, 3 and 5 gallons with swinging handle. Sizes ½ to 5 gallons filled directly from gasoline hose nozzle.

No.	**1000**	**1010**	**1020**	**1030**	**1040**	**1050**	**1060**
Without Screen.each	**$2.80**	**3.00**	**3.40**	**4.00**	**5.00**	**6.00**	**7.40**
Capacity.....gallons	1-Pt.	1-Qt.	½	1	2	3	5
Diameter.....inches	4⅝	4⅝	7¼	7¼	9⅜	9⅜	11½
Height.......inches	6¾	8¼	8⅜	11½	12⅝	16⅛	17
Shipping Weight..lb.	2	2½	3	4	7	8	9

Baffle Screens

A non-flash-back baffle screen for use with safety cans. Easily removed or inserted. Made of two layers of wire mesh. Inner mesh of heavy wire covered by an outer layer of fine mesh wire. Held by special locking ring. Screens are not required by Underwriters'; required by Factory Mutual in 1, 2, 3 and 5-gallon sizes. Specify size when ordering.

Capacity.....gallons	**1-Pt.**	**1-Qt.**	**½**	**1**	**2**	**3**	**5**
Each	**$.80**	**.80**	**.80**	**.80**	**.80**	**.80**	**.80**



Dixon's Ticonderoga Flake Lubricating Graphite

Used by power plant engineers and others for lubrication and coating gaskets, packing, etc.

Furnished in particle size No. 1 in large, unctuous, lustrous flakes; or No. 2 in finely subdivided, powdered flakes. Specify No. 1 or 2 when ordering.

The 25, 50, 100 and 200-lb. quantities furnished in drums, all other sizes in cans.

Size Container....lb.	1	5	25	50	100	200
Per Pound	$.64	.58	.49	.44	.43	.42
No. per Case	36	8	...	...	...	...

Blue Seal Pipe Joint Cement

BLUE SEAL
FIVE
POUNDS
PIPE JOINT
CEMENT

Used for sealing joints in water, gas, steam, oil, ammonia, and air lines. Will make a permanent seal for the life of the line.

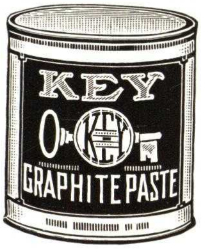
Will prevent corrosion and rust. The combination of oils used prevents drying hard, enabling lines to be quickly taken apart without fear of injury to threads or joints. It will not destroy the seat of valves or faucets. It is easily applied.

Size Can....pounds	1	5	10
Per Can	$.20	.95	1.75
No. of Cans per Case	48	6	6

Also packed in 50 and 100-pound drums.

Key Graphite Paste

For all screw thread and gasket joints. Used in all steam plant and boiler connections, hot oil and hot air lines, internal combustion engines, pumps, oil burning equipment, or any high temperature service. Holds joint leakproof against oils, acids and gases which penetrate ordinary oil mixed compounds. Does work of red and white lead, graphite, oil, shellac, litharge, glycerine, etc. Needs water only for thinning.



Description	Each	No. in Case	Net Wt. Lb. per Case
¼-Lb. Can	$ .28	144	36
1-Lb. Can	.85	24	24
3-Lb. Can	1.95	12	36
10-Lb. Can	5.00	6	60
60-Lb. Bucket	18.00	..	..
400-Lb. Barrel	per lb. $.15		

Key-Tite Waterproof Pipe Joint Compound

Key-Tite Pipe Joint Compound will effectively seal screw thread and gasket joints for such service as gas, water, steam, compressed air, etc.

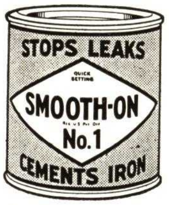
KEY-TITE
WATER PROOF
PIPE JOINT
COMPOUND

It is not a quick hardening cement, but a plastic lubricant and filler that will seal the most obstinate joint with ease.

Covers more surface than lead mixtures and is more economical.

½-Pint Can	each	$.28
1-Pint Can	each	.45
1-Quart Can	each	.83
1-Gallon Can	each	2.80
5-Gallon Pail	each	11.80
400-Pound Drum	per lb.	.17½

Smooth-On Iron Cements



No. 1 is a quick-hardening iron cement used by mixing with water. For repairing breaks in castings, making tight joints and seams, and stopping leaks in boilers, pipe lines, pressure containers, etc. Becomes hard as iron when metallized, and expands at the same rate. May be used on iron, brass, steel, copper, lead, aluminum, etc., either alone or as a filling compound under a plate, and will withstand fire, water, steam, oil, and high pressures. In powder form.

	Tin				Keg	
Size Container....pounds	*1¾	*7	1	5	25	100
Per Pound	†$.10	†.30	.50	.40	.33	.28

No. 2 is a slow-hardening hydraulic iron cement for the same uses as No. 1. In powder form.

	Tin		Keg	
Size Container....pounds	1	5	25	100
Per Pound	$.50	.40	.33	.28

No. 3 is for making screw-thread joints, coating gaskets, and sealing rivets, seams and joints in boilers, etc. Lubricates in assembling screw threads. In paste form.

	Tin		Keg
Size Container....pounds	1	5	25
Per Pound	$.50	.40	.33

No. 4 is for filling surface defects in castings; No. 4AA is light gray with high-metallic luster, No. 4A medium gray with medium luster, and No. 4B dark gray. Powder form.

	Tin		Keg			
Size Container....lb.	1	5	10	25	50	100
No. 4AA....per pound	$.50	...	$.41	...	$.35	...
No. 4A....per pound	.40	$.30	...	$.25	...	$.22
No. 4B....per pound	.30	.21	...	.19	...	.16

No. 5 is used by mixing with water. For caulking bell-and-spigot joints in cast iron soil, water, or gas pipes. Requires no heat. In powder form.

	Tin		Keg	
Size Container....pounds	1	5	25	100
Per Pound	$.30	.21	.19	.16

No. 6 is a dark gray plastic iron putty, sold ready for use for making joints on sky and vault lights, for filling in seams, rivet heads and for setting glass in metal frames, etc.

	Tin		Keg	
Size Container....pounds	1	5	25	100
Per Pound	$.40	.30	.25	.22

No. 7 is a hydraulic iron cement for porous cellar walls, wet or dry surfaces, and making hard dustproof concrete floors. Especially useful for floors in garages, where oil is usually spilled and heavy tools allowed to drop. In powder form.

	Tin		Keg	
Size Container....pounds	1	5	25	100
Per Pound	$.25	.20	.17	.15

No. 7B quick patch floor cement. An iron cement used alone for repairing shallow holes, ruts, cracks, seams or rough places.

	Tin		Keg	
Size Container....pounds	1	5	25	100
Per Pound	$.25	.20	.17	.15

*Ounces. †Per tin.

Scotch Cellulose Tape

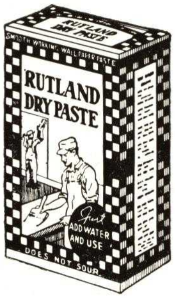
SCOTCH Cellulose TAPE
25¢

Transparent cellulose tape in utility dispenser.

Non-refillable.

Size Roll Inches	Each	Wt. per Roll Lb.
½x180	$.15	¾
½x360	.25	1
¾x300	.25	1¼

Rutland Dry Paste


RUTLAND DRY PASTE
Just ADD WATER AND USE
DOES NOT SOUR

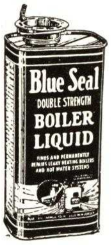
An all wheat paste in powder form for pasting wall paper. Stirs quickly and smoothly into solution with either hot or cold water. Spreads smoothly and is slippery enough to allow the paper to be slid easily into place for exact matching of patterns.

The small sizes are packed in cartons instead of in bags. The 1-pound carton is especially convenient when, instead of papering an entire room, it is desired to make small repairs over a mended crack or hole, or to repaste loose paper.

Size Carton.........lb.	**1**	**2**	**5**	***100**
No. in Case...........	24	12	4	...

*Bag.

Blue Seal Hot or Cold Boiler Liquid


Blue Seal
DOUBLE STRENGTH
BOILER LIQUID

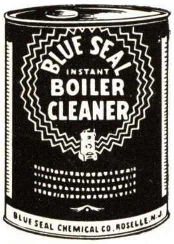
Blue Seal Hot or Cold Boiler Liquid quickly and permanently repairs leaks in heating systems with or without a fire.

Scientifically tested before it leaves the laboratory and must measure up to the proper degree of strength and uniformity before it is placed in the can.

Blue Seal is guaranteed and sold strictly and exclusively to the plumbing and steam-fitting industries.

1-Quart Can..................................	each	**$1.50**
Case of 12, 1-Qt. Cans.....................	per case	**15.00**

Blue Seal Boiler Cleaner


BLUE SEAL
INSTANT
BOILER CLEANER
BLUE SEAL CHEMICAL CO. ROSELLE, N.J.

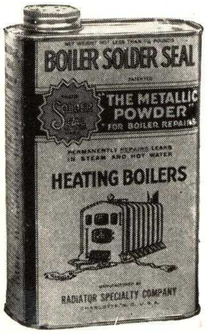
Blue Seal Instant Boiler Cleaner contains ingredients that in themselves without a boiling process, will generate enough heat to dissolve and liquefy any substance that may be caused through water conditions.

It will leave the inner walls of a boiler, pipes or radiators as clear of foreign matter as when new.

Packed 12 cans to carton.

2-Pound Can.................................each **$1.25**

Boiler Solder Seal


BOILER SOLDER SEAL
THE METALLIC POWDER
FOR BOILER REPAIRS
HEATING BOILERS
RADIATOR SPECIALTY COMPANY

Boiler Solder Seal is a metallic base powder which automatically finds and repairs leaks in steam and hot water heating systems.

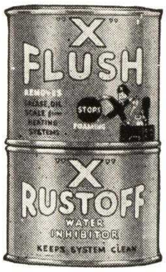
After Boiler Solder Seal has hardened in the leaks it has a tensile strength equal to that of the metal to which it is attached.

Quantities.—Steam Boilers, one can for boilers with 8 sq. ft. of grate surface or less; one can for each additional 8 sq. ft. Hot water boilers require 50 per cent more.

Furnished ready for instant use.

In 1¼-Pound Cans Only.....................each **$5.00**

X Flush and Rustoff Treatment


X FLUSH
STOPS FOAMING
X RUSTOFF
WATER INHIBITOR
KEEPS SYSTEM CLEAN

A complete heating system treatment in a combination package of 2 interlocking cans.

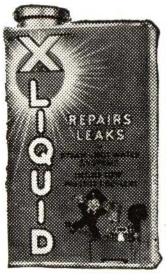
X Flush chemically cleans the system without the use of acids; removes grease, oil and scale and stops foaming.

X Rustoff, used after the cleaning operation, keeps the boiler water clean while retarding the formation of rust and scale.

Harmless; requires no mixing with water before using.

1-Pound Can..............	per combination package	**$2.45**
3-Pound Can..............	per combination package	**5.45**

X Boiler Liquid


X LIQUID
REPAIRS LEAKS

For repairing leaks in high and low pressure steam and hot water boilers. Contains no soap or meal.

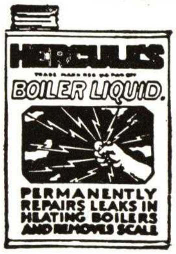
When used on new installations, it takes up the small sand hole leaks.

Used 1 part X Boiler Liquid for 50 parts of water. One quart of liquid is usually sufficient for boiler capacity rating up to 500 square feet steam.

Size Container............................	1-Qt.	½-Gal.
Each..	**$2.10**	**3.40**
No. in Carton..............................	12	6
Weight Per Carton..............pounds	34½	32

Hercules Boiler Liquid

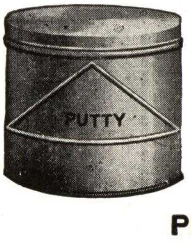
Triple Strength


HERCULES
BOILER LIQUID
PERMANENTLY REPAIRS LEAKS IN HEATING BOILERS AND REMOVES SCALE

An internal seal that repairs water leaks automatically throughout high or low pressure steam or hot water heating boilers.

	1-Qt. Can	½-Gal. Can
Per Dozen..........................	**$9.00**	**16.50**
No. in Case........................	6 or 12	6

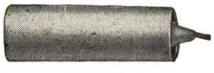
Plumbers' Putty



Best quality putty. Furnished in 10 and 25-pound pails.

Size Pail............pounds	**10**	**25**
Per Pail....................	..	..

Plumbers' Candles



For general utility use.

Packed in 20-pound and 50-pound boxes.

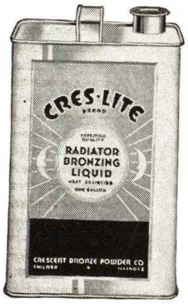
Per Dozen.. **$1.50**

Cres-Lite Aluminum Bronze Powder

A chemically pure 140-mesh extra brilliant powder.

Will mix with varnish or lacquer.

Put up in 1-pound cans.



Cres-Lite Radiator Bronzing Liquid

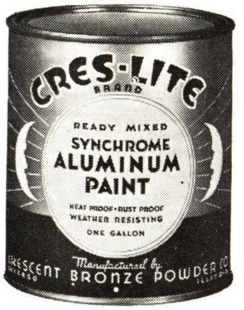
A heat-resisting bronzing liquid for use on radiators or other heated surfaces up to 600°F.

Put up in 1-gallon cans.

Packed 4 gallons to a carton.

Shipping weight, per carton, 36 lb.

Cres-Lite Synchrome Aluminum Paint



Used as a protective coating for tanks, stacks, roofs, metal, concrete, brick, and other structures and equipment.

Resists weather, corrosion, moisture, fumes, and temperatures up to 600°F.

Can be applied by brush, dip, or spray to leave a brilliant and durable finish.

Covers up to 800 square feet per gallon depending upon method of application and surface to which it is applied.

One coat covers most surfaces with a chrome-like aluminum finish.

Sets to touch in 1 hour; dries hard in 8 hours.

Only a high purity 325 mesh aluminum pigment made from 99 plus per cent pure aluminum is used.

Packed: six 1-gallon cans to a carton; six ½-gallon jars to a carton; twenty-four quart jars to a carton; twelve pint jars to a carton; twenty-four ½-pint jars to a carton.

Per Quart.................................each .....
Per Gallon...............................each .....

Blue Seal DeLuxe Enamel Cleaner

An all-purpose cleaning product that will not injure the finest surfaces.

For use on enamelware. Also for cleaning walls, floors, woodwork, silver, aluminum, etc.

Packed in sifting top, 16-ounce cans; 48 cans to a case.

Per Case..**$6.00**

Pax Skin Cleansers

Package

DeLuxe Can

Containing anti-dermatitis emollient. Paxlanosav Heavy Duty recommended for industrial plant workers, both men and women. Pax Light Duty for office workers. Used for hands, face, shampoo, and shower, exceptionally bland.

Size Package	pounds	2	5
Heavy Duty	per package	**$1.30**	**$2.80**
Light Duty	per package	**3.10**	**1.40**

DeLuxe Packages

Paxlanosav Heavy Duty packed in deluxe cartons.

Light Duty, packed in shaker top, lithographed, metal cans.

Each...**$.30**
Case of 24..**6.50**

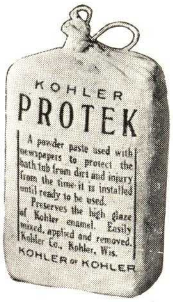
No. K-1200 Kohler Cleanser

Will remove dirt, grease, rust stains, etc., from enameled iron or vitreous china ware without injurious effects, and without destroying the luster of fixtures.

Packed 2 dozen 12-ounce cans in a case.

No. K-1200...............per case .....

No. K-970 Kohler Protek Powder



A powder-paste used with newspapers for protecting the glaze on plumbing fixtures during the time building is under construction.

Is easy to apply and is easily removed.

Packed in 1½ pound bags; 12 bags to the case.

No. K-970 ....per bag ....

Allen Stainless Steel Polish

Cleans and brightens stainless steel quickly and efficiently. It is guaranteed not to scratch or injure the surface, it removes surface blemishes, discoloration, welding and brazing burns.

Useful for restoring the original luster to stainless steel. It is indispensable for touching up soldered joints. Readily brings out the high luster of the metal at the soldered joints or seam.

Size of Container	1-Lb.	5-Lb.
Per Pound	**$1.35**	**.90**

For larger quantities, prices upon application.

Blue Seal Drain Pipe Solvent

BLUE SEAL
DOUBLE STRENGTH
DRAIN PIPE SOLVENT
TRADE MARK REGISTERED

A fumeless drain pipe solvent that is guaranteed to clear any drain pipe stoppage not caused by glass, metal or other solid substances.

Blue Seal Drain Pipe Solvent is also effective for thawing frozen drain pipes, stacks, flush tanks, traps, etc.

Put up in friction top cans.

Will not injure the finest plumbing.

1-Pound Cans	each	**$.40**
2-Pound Cans	each	**.75**
100-Pound Drums	each	**21.50**

E-Ject-O Drain Opener

E-JECT-O
DRAIN OPENER

Dissolving action actively agitates obstruction and boils cold water in ninety seconds. Harmless to drain pipes or enamel, solution can be poured directly into pipe. No offensive fumes or odors and no foaming. Does not solidify when it cools.

Size Container......ounces	12	28
Each	**$.25**	**.50**

Ridgoil Thread Cutting Oil

ONE GALLON
RIDGOIL
SULPHUR BASE
OIL
No. 1 DARK
THE RIDGE TOOL CO.
ELYRIA, OHIO, U.S.A.

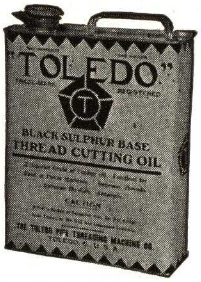
Used for cutting smooth, clean threads on iron, steel, or brass pipe.

Penetrates quickly, cools and lubricates, and is antiseptic, preventing risk of infection. Will not congeal above 20°F. Saves cutting blades.

Supplied in cans.

Size Container Gallons	**Dark** Each	**Nu-Clear** Each
1	**$1.10**	**$1.20**
5	**4.63**	**5.09**
30	**20.00**	**22.00**
55	**33.52**	**37.00**

Toledo Black Sulphur Base Thread Cutting Oil



Will not turn rancid. Assures smooth, clean threads, tight joints and increased die service. Especially good for hand tools or power machines.

1-Gal. Cans or **5**-Gal. Sealed Pails.........per gallon **$1.10**

Lard Oil

Pure winter strained lard oil.

Size of Can..............gallons	**1**	**5**
Per Gallon	....	...

Liquid Wrench

"It Melts the Rust Away"

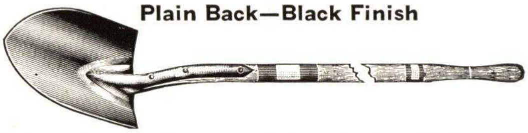
Liquid
WRENCH
FOR ALL FROZEN JOINTS
SOLDER SEAL
It Melts the Rust Away
NOTHING ELSE LIKE IT

Can be used on all metals, such as aluminum, cast iron, bronze, brass, steel, etc., and on combinations of metals. Harmless to metal or metal bearing alloy, or hands and skin. Dissolves rust, changes it into a grease form to help free the frozen part. Squirt it on the frozen joint, then tap lightly to cause vibration. If necessary, try to tighten the connection slightly to work the Liquid Wrench farther in, then add a few more drops. Nuts, bolts, studs, pipes and flanges, etc., come apart easily at the twist of a wrench.

Size Can	**1**-Pint	**1**-Quart	**1**-Gallon
Each	**$1.25**	**2.25**	**8.00**
No. per Case	12	12	4
Weight per Case....pound	15	29	35

No. 103 Baldwin Long Handle Round Point Shovels

Plain Back—Black Finish



High carbon steel. Knoxall brand shovels have No. 1 grade handles. Pinnacle and Monongah shovels have X grade handles.

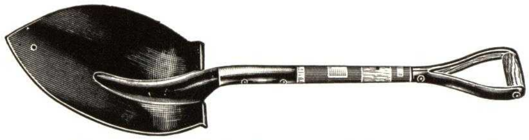
All grades heat treated. Pinnacle brand, 14 gage; Monongah brand, 16 gage; Knoxall brand, 15 gage.

Size No.	**2**	**4**	**6**	**Fwt.** **2**
Pinnacle.......per dozen	**$25.65**	**$27.47**	**$29.30**	**$25.65**
Monongah......per dozen	**25.65**	**27.47**	**29.30**	**25.65**
Knoxall........per dozen	**23.37**	**25.19**	.....	.....
Size Blade.........inches	9x11¾	10x12¾	11x13¾	8¾x11¾
Weight per Dozen.pounds	55–60	59–64	61–65	47–50

No. 316 Ames Breakdown Scoops

Genuine O. Ames Brand—Alloy Grade

Diamond Point—Hollow Back—Turned Steps Armor D Handle



BLADE: 15-gage special alloy steel, heat treated. Size No. 5, 11½x16½ inches. Black finish.

HANDLE: XX grade northern white ash, sanded, waxed and polished. Length, 27 inches. Lift, 21 to 23 inches.

Packed 6 in a bundle.

Weight per dozen, 66–68 pounds.

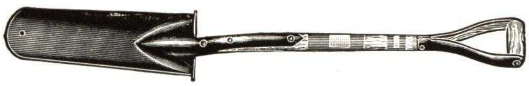
No. **316**..................................per dozen **$38.08**

No. XXHBA repair handles are available.

No. 120 Ames Drain Spades

2-Star Brand—B Grade

Plain Back—Riveted Steps—Armor D Handles



BLADE: Made of 14-gage high carbon steel, heat treated. Straps electrically seam welded to blade. Black finish.

HANDLE: X grade northern ash, sanded, waxed and polished. Length, 27 inches. Lift, 6 to 8 inches.

Packed 6 in a bundle.

Size No.	**14**	**16**	**18**
No. **120**.............per dozen	**$28.50**	**29.41**	**30.32**
Size Blade...............inches	4¾x14	4¾x16	4¾x18
Weight per Dozen......pounds	54	57	60

No. XSPA, Repair Handle...............per dozen **$9.80**

Half and Half Solder

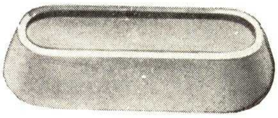
HALF AND HALF

Commercial, furnished in pound bars.

Warranted, furnished in half pound bars.

Prices upon application.

Wiping Solder



Wiping solder at market prices.

Wire Solder

50/50 or 40/60

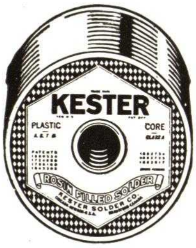
For use in mechanical or automatic feeding machines and with manual devices.

Either 50/50 or 40/60 furnished, as specified.

Made in 1 and 5-pound spools. Prices on application.

Kester Plastic Rosin-Filled Solder

For Electrical and Radio Work



With plastic rosin flux, non-corrosive and electrically non-conductive.

The flux flows, as the solder melts, in just the right amounts for a perfect soldering job.

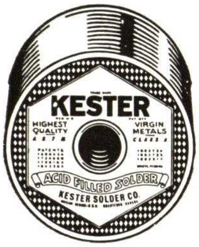
Requires only heat.

Standard size, 3/32 inch, about 50 feet to the pound.

Size Spool......................pounds	1	5	20
Each..................................	....	....	....

Kester Acid-Filled Solder

For General Soldering



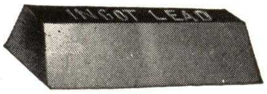
Easy to use, saves time, and is dependable for a permanent bond.

Contains a scientifically prepared flux that flows in just the right proportions as the solder melts. Requires only heat.

Standard size, 1/8 inch, about 25 feet to the pound.

1-Pound Carton..............................	each	.....
1-Pound Spool................................	each	.....
5-Pound Spool................................	each	.....
20-Pound Spool..............................	each	.....

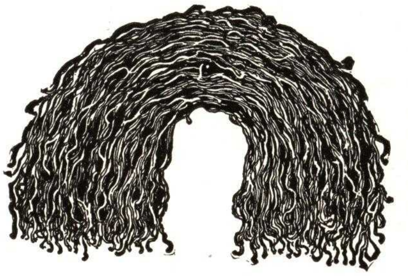
Caulking Lead



Supplied in 5-pound bars.

Market prices.

Lead Wool

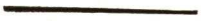
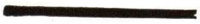
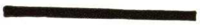
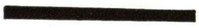
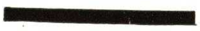
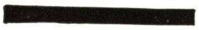
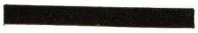
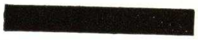
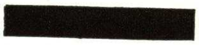
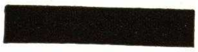
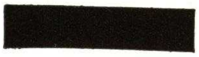
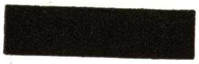
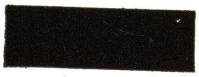
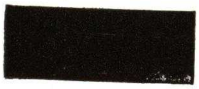


Lead wool is lead cut in fine fibres which are put into the joint in the same way as yarn. The lead is being calked from the yarn up, which gives tight, perfect joint that will never leak and yet is flexible.

Per Pound.. .....

Sheet Lead

When ordering sheet lead, state weight per square foot or thickness in fraction of an inch. Dimensions in feet and inches.

Wt., Lb. per Sq. Ft.	Showing Actual Thickness	Thickness, Inches Fraction	Decimal
1		1/64	.0156
2½		5/128	.0391
3		3/64	.0468
3½		7/128	.0547
4		1/16	.0625
5		5/64	.0781
6		3/32	.0937
8		1/8	.1250
10		5/32	.1563
12		3/16	.1875
14		7/32	.2188
16		1/4	.2500
20		1/3	.3333
24		2/5	.4000

Leadite

For Jointing Cast Iron Water Mains

A self-caulking substitute for pig lead. Leadite is melted and poured into the joint but requires no caulking.

One pound of Leadite is equivalent to four pounds of lead because it is so much lighter than lead.

Its use saves 50 to 75 per cent over lead.

Approximate Quantities for Making Joints Based on A.W.W.A. Standard Bell and Spigot C.I. Pipe

Nominal Diameter Pipe, In.	Depth In.	Material, Lbs. per Joint Lead	Leadite	Nominal Diameter Pipe, In.	Depth In.	Material, Lbs. per Joint Lead	Leadite
4	2.5	8.56	2.00	**18**	2.5	36.88	9.25
6	2.5	11.71	3.00	**20**	2.5	40.71	10.50
8	2.5	14.63	4.00	**24**	2.5	53.02	13.00
10	2.5	17.70	5.00	**30**	2.75	65.36	16.00
12	2.5	20.86	6.00	**36**	2.75	77.96	19.00
14	2.5	24.02	7.00	**42**	3.5	95.82	26.00
16	2.5	33.07	8.25	**48**	3.5	121.15	30.00

Allen Soldering Paste

A corrosion free, soft form of flux.

Carries Underwriters' approval.

Size Can	Job Size	2-Oz.	4-Oz.	½-Lb.	1-Lb.	5-Lb.
Each	$.08	.13	.25	.50	.90	4.40
No. in Carton	24	24	24	12	6	1

Allen Ezy-Flo Torch Formula Soldering Paste

Special soldering paste for torch and sweat joint soldering. Works well with the soldering iron.

Size Can	Job Size	2 Oz.	4 Oz.	½ Lb.	1 Lb.	5 Lb.
Each	$.08	.13	.25	.50	.90	4.40
No. in Carton	24	24	24	12	6	1

Allen Soldering Sticks

ALLEN
SODERING STICK
MAKES SODERING EASY
ACIDLESS · NON-CORROSIVE · FUMELESS
OFFICIALLY APPROVED BY THE NATIONAL BOARD OF UNDERWRITERS

An economical rapid flux. Just a touch to the hot metal does the work.

Fuses the solder rapidly without fuss, muss or after corrosion. Size, 1x5¼ inches.

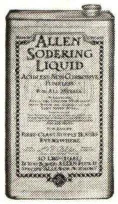
Samson Formula	each $.15
Standard Formula	each .30

Allen Soldering Salts

These salts are dry and in concentrated form. To make up a perfect flux of sufficient strength to use on old metal add three parts water to one part salts; on new metal, use even greater dilution.

Size Bottle	½-Lb.	1-Lb.	5-Lb.
Each	$.40	.59	2.70
No. in Carton	12	6	1

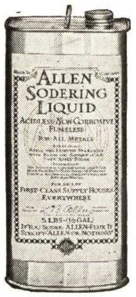
Allen Soldering Liquid



For all-a-round work, for all metals except aluminum and stainless steel. Standard formula. Non-evaporating. Adaptable to hand, or machine soldering. Excellent for tinning and soldering copper.

Size Can	2-Oz.	4-Oz.	1-Qt.	1-Gal.
Per Can	$.13	.20	.65	2.00
No. per Carton	24	12	3	1

Allen Neutral Rosin Fluid Flux



Flux of absolute safety for electric motors, telephone, radio, commutators, instrument work, fine wires, etc.

Can be spilled on the work and allowed to remain forever with no corrosion hazard to finest wire or metals.

Absolutely neutral and moisture free and non-conductive to electrical current.

Size Can or Bottle	1 Quart	1 Gallon
Each	$.85	3.00
No. in Carton	3	1

Allen Aluminum Solder

ALUMI — SODER

Complete solder and flux combined. Requires only heat to permanently join aluminum to itself or other metals.

Bars and wire, packed 6 pounds to carton.

¼-Pound Bars	per pound $2.00
1-Pound Bars	per pound 1.50
Wire, ⅛-Inch, 11-Gage, Square	per pound 2.20

Allen Soldering Oil

A highly technical, concentrated soldering compound, officially endorsed by the National Underwriters.

Causes neither verdigris nor corrosion.

Gets into the tiniest crevice and takes the solder along with it. Makes perfect mechanical and electrical joints.

For hand or machine soldering.

In addition to the three sizes listed, this oil may also be procured in bulk.

1-Pound Can	each $.80
3-Pound Can	per pound .70
12-Pound Can	per pound .60

Allen All-Sol Stainless Steel Soldering Flux

This flux makes the soldering of stainless steel almost as easy as soldering any common metal, yet the joints are strong and permanent.

No special tools are needed. Just brush on the flux and apply solder in the usual manner. The solder takes hold in a tight, smooth, silvery joint.

Used with ordinary solder, or the special Allen Stainless Solder. White Label shipping regulations.

1-Pint Bottle	each $1.60

Green Streak Liquid Soldering Flux

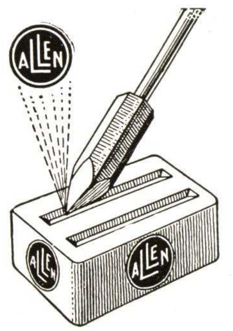
GREEN STREAK
All-Metal Flux
NON-CORROSIVE
MANUFACTURED BY
METAL MENDING PRODUCTS, INC.
MILWAUKEE, WIS.

For soldering monel, copper, brass, bronze, inconel, lead, zinc, nickel, tin, cold rolled steel, etc. Also adapted for sweating copper or brass tubing into fittings. Will not stain monel metal. Non-corrosive. Odorless and fumeless. Does not evaporate. Will not injure skin or clothing.

Packed in bottles.

Size Container	½ Lb.	1 Pt.	½ Gal.	1 Gal.
Per Container	$.60	1.80	4.00	7.50
Approx. Weight.......lb.	½	2	8	16

Allen Solid Sal Ammoniac



Speedily cleans and brightens the soldering copper. Outlives fibrous lump many times.

It is six sided, solid and convenient.

Does not crumble, nor corrode metal work or tools on the job.

Put up in individual cartons.

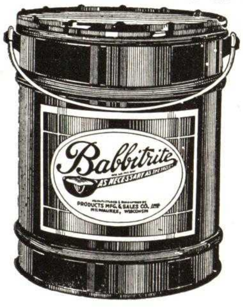
Package quantities are packed in corrugated, tape sealed cartons.

Size.......pounds	¼	½	1
Each	$.20	$.35	$.60
Package Quantity	24	12	6

Babbitrite

A Retainer for Molten Babbitt Metal

Babbitrite is supplanting putty and clay as a retainer for molten babbitt metal, while pouring bearings. When it is used, blow-outs are impossible and perfect bearings are assured. It can be used 100 times for babbitting without requiring any preparing or mixing. It will not dry out, harden or absorb moisture, being unaffected by heat. It combines strength of body with the quality of adhering closely to the work.

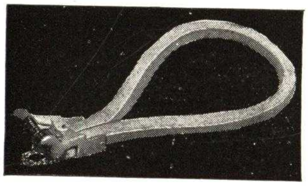

Babbitrite
AS NECESSARY AS THE METAL
PRODUCTS MFG. & SALES CO. INC.
MILWAUKEE, WISCONSIN

Size numbers indicate approximate weight in pounds of contents of containers.

No. **5** Size Can..per can	**$1.75**
No. **15** Size Pail..per pail	**4.25**
No. **30** Size Pail..per pail	**7.50**
No. **50** Size Pail..per pail	**12.50**

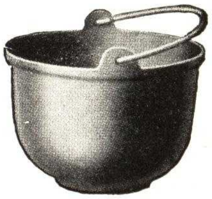
J-M Asbestos Lead Joint Runners

Made of specially prepared asbestos rope, having a ferrule on each end, and provided with clamping device for fastening in place on the pipe.



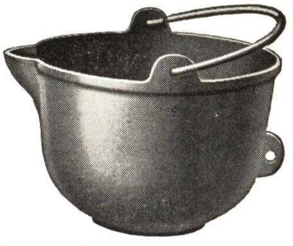
Size No.	Each	To Fit Pipe Inches
1	**$2.15**	2, 3 & 4
2	**2.35**	4, 5 & 6
3	**4.15**	6, 8 & 10
4	**5.40**	10, 12 & 14
5	**11.00**	16, 18 & 20
6	**12.25**	24
7	**13.95**	30
8	**15.75**	36
9	**17.65**	42
10	**18.80**	48

No. 1 Melting Pots Without Lip



Diameter......inches	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Depth.........inches	2¼	2¾	3½	3¾	4¼	5¼	5¾
Capacity.....pounds	8	10	20	25	35	60	90
Weight.......pounds	2	2½	4	5	7	10	15

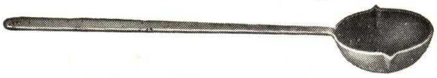
No. 2 Melting Pots with Lip



Cast bowl. Wrought iron handle. Steel bail.

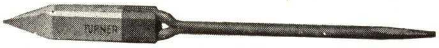
Size No..................	**10L**	**12**	**14**	**15**	**16**
No. 2...............each	**$3.20**	**4.20**	**6.00**	**9.00**	**12.00**
Diameter...........inches	10	12	14	15	16
Depth, Inside.......inches	5¾	7½	8½	9½	10
Capacity...........pounds	90	175	250	300	500
Weight.............pounds	16	24	45	55	65

Malleable Iron Melting Ladles

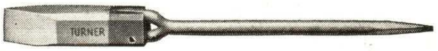


Diameter......inches	**2½**	**3**	**3½**	**4**	**5**	**6**
Per Dozen...........	**$3.00**	**3.60**	**4.80**	**5.40**	**6.60**	**7.80**
Length.........inches	13	14	15½	16	19	21
Capacity.....pounds	1	1½	2½	3½	7	12
Weight per Dozen.lb.	9	10	14	17	24	30

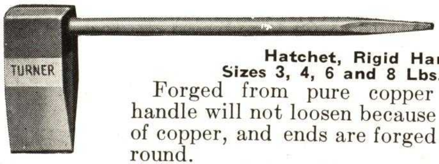
Turner Hold Heat Forged Soldering Coppers



Pointed, Clincher Handle—Sizes ¼ to 14 Lbs. per Pr.



Bottom, Clincher Handle--Sizes 1 to 14 Lbs. per Pr.



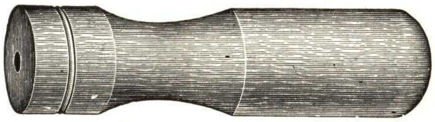
Hatchet, Rigid Handle
Sizes 3, 4, 6 and 8 Lbs. per Pr.

Forged from pure copper bars. Clincher handle will not loosen because rod pierces base of copper, and ends are forged back into a solid round.

Wt., per Pr....lbs.	3 & Heavier	**2½**	**2**	**1½**	**1**	**¾**	**½**	**¼**
Per Lb. Over Base	Base	**$.01**	**.02**	**.03**	**.06**	**.12**	**.20**	**.60**

Hatchet copper, rigid handle, 5 cents per pound extra.

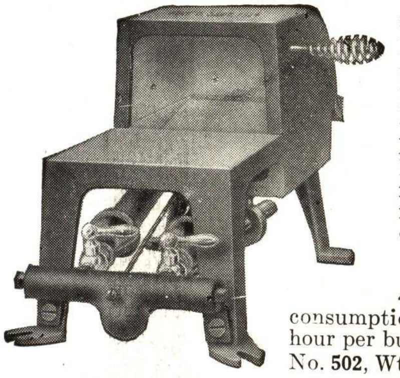
Soldering Copper Handles



Soft wood and wired. Size about 1¼x5½ inches.
Per Gross.. ....

No. 502 Johnson Soldering Furnaces

Series B

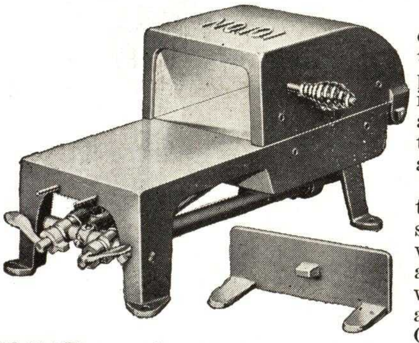


Designed to heat soldering coppers up to 12 lb. per pair. Has two Johnson Bunsen burners, each with a shut-off valve and pilot light. Made of cast iron. Base is lined with firebrick. Hood forces a return blast over top of irons.

Length, 14 inches. Firepot opening, 4½x3 inches. Gas consumption, 13,000 Btu's per hour per burner.

No. **502**, Wt., 18 Lb.each **$12.00**

No. 101 Johnson Bench Furnaces

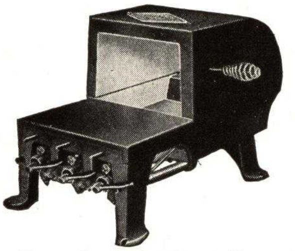


For heating soldering coppers up to 12 pounds per pair; heat treating, tempering, etc. any carbon steel tools, or small metal parts.

Equipped with: two Johnson Bunsen Burners, each with shut-off valve and pilot light; work rest block; and a baffle plate. Gas consumption, 13,000 Btu. per hour per burner. Length 14 inches. Firepot opening, 4½x2¾ inches. Firebox, 3¾x4½x5½ inches.

No. **101**, Weight, 18 Pounds..................each **$15.50**

No. 108 Johnson Bench Furnaces



Equipped with three independent Johnson Burners with shut-off valves and pilot lights.

This furnace will handle the largest soldering coppers, branding irons, stenciling irons, etc.; will also heat treat any carbon steel tools, and can be used as an auxiliary to larger furnaces.

Length, 16 inches; Size of fire box opening, 4x6 inches; size of fire box, 6¼x5x6½ inches.

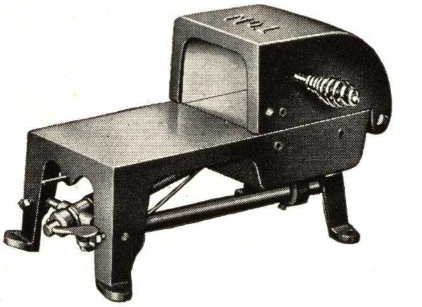
Gas consumption, 13,000 B.T.U.'s per hour per burner.

Weight, 43 pounds.

No. 108	each	**$26.00**

No. 1 Johnson Gas Soldering Furnaces

A cast iron bench furnace designed to heat soldering coppers up to 6 pounds per pair. Also for heat-treating, tempering and annealing of small carbon steel tools.



Equipped with one Bunsen burner with shut-off valve.

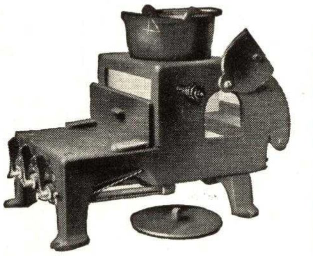
Firebox is lined with a heavy refractory lining.

Length, 12 inches. Firepot opening, 3½x2½ inches. Gas consumption, 13000 Btu. per hour.

Ship. weight, 16 pounds.

No. 1	each	**$12.00**

No. 118 Johnson Bench Furnaces



The Johnson Bench Furnace is efficient for treating carbon steel tools within its capacity. The heating of long rods is also possible by opening the side doors of the hood. The lid on the hood may be removed and a 25-pound capacity melting pot may be inserted. The baffle plate retains the heat and secures an even temperature.

A melting pot 6 inches in diameter and of 25-pound capacity is furnished. Equipped with three independent burners which will produce a heat of 1800°F. in the firebox. Size of firebox, 6¼x5x6½ inches. Length overall, 16 inches.

Gas consumption, 13,000 Btu. per hour per burner.

No. 118	each	**$29.00**

C&L
No. 50-A
DETROIT

No. 50A C & L Coil Fire Pots

¾-Gallon Capacity

For Gasoline

All inlet and outlet fittings are seamed integral with tank under heavy hydraulic pressure.

Tank shells are made of thick steel and heavily tinned inside and outside to prevent rusting.

Easy to start and simple to operate. Burns low gravity gasoline in any kind of weather.

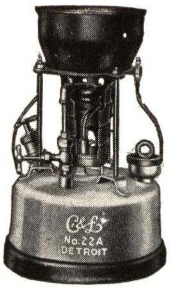
Made with a small size, rust proof steel tank but designed to handle a full 6-inch metal pot. Generates a powerful blast flame which quickly melts a pot of solder or babbitt. Equipped with detachable coil unit, automatic pump, and a filler plug with dust cap to cover filling funnel.

Shipping weight, 11½ pounds.

No. 50A	each	**$11.20**

No. 22A C & L Coil Fire Pots

1-Gallon Capacity—For Gasoline or Kerosene



A favorite with the plumbing trade. Equipped with quick detachable coil unit. Easy to start, simple to operate, burning in any kind of weather.

It generates a large powerful blast flame which quickly melts a pot of solder or babbitt.

Has broad base, sturdy uprights, sets low and is designed to handle a 6-inch metal pot. Filler plug made with dust cap to cover filling funnel.

Regularly supplied for burning gasoline. Kerosene may be used by changing burner jet. Specify if kerosene is to be used.

Shipping weight, 14 pounds.

No. 22A	each	**$13.30**

No. 44-A C & L Coiltrol Fire Pots

With Flame Control—Capacity, 1 Gallon

For Gasoline

C&L
No. 44-A
DETROIT

Easy to start and simple to operate. The coil unit has a flame control device which allows the flame to be varied in size and volume. A pot of metal can be rapidly melted and then, by an adjustment of the flame control valve be held at the desired temperature. This results in a saving of gasoline and metal. Regularly supplied for burning gasoline. Kerosene may be used by changing burner jet.

Shipping weight, 13¾ pounds.

No. 44-A	each	**$13.80**

No. 75 C&L Heavy Duty Fire Pots

1-Gallon Capacity—For Gasoline or Kerosene

C&L
No. 75
DETROIT

Produces an extra large, powerful blast flame which may be regulated by the flame control device.

Quickly melts 75 pounds of solder, kettle of paraffin or insulating compound.

Tapering top shield 10 inches in diameter at the top.

Quick-acting pump. Removable burner unit.

Regularly supplied for burning gasoline. Kerosene may be used by changing burner jet.

Shipping weight, 26 pounds.

No. 75	each	**$23.80**

No. 180 C & L Silent Firepots

1-Gallon Capacity

For Gasoline

C&L
No. 180
DETROIT

For sheet metal workers, roofers, tinners, and general utility use.

Horseshoe burner is simple and rugged, and directs twin blue flames against coppers and bottom of metal pot. Will heat a pair of 12-pound soldering coppers and a pot of metal at the same time.

Flame easily regulated by single bakelite handwheel to prevent overheating. Cast iron hood holds the heat on windy days. May be taken apart for cleaning by removing three wing nuts and loosening generator union.

Shipping weight, 25 pounds.

No. 180	each	**$18.40**

No. 91 C & L Single Needle Fire Pots

For Gasoline—Capacity, 1 Gallon

The burner has great generating power. Heats a pair of 12-pound soldering coppers and pot of lead at same time.

C&L
No. 91
DETROIT

A swivel permits turning the burner up or down.

The top section is of steel and can be quickly removed by loosening a set screw, and base with burner used as an open fire.

The heavy gage drawn steel tank is strongly reinforced and fitted at base with patented cushion band.

Shipping weight, 14¾ pounds.

No. **91**......................................each **$17.20**

No. 326 C & L Heavy Duty Blowtorches

1-Quart Capacity—For Gasoline or Kerosene

For extra heavy work. Powerful burner has steady strong blue blast 10 inches in length. Flame can be regulated for ordinary work.

Blunt control valve makes it impossible to enlarge orifice.

Has full skirted heavy windshield securely fastened in place. Brass tank with bottom filler plug. Automatic pump.

Regularly supplied for gasoline. Kerosene may be used by changing jet block and cleaner pin. Specify when ordering if kerosene is to be used.

Shipping weight, 5¾ pounds.

No. **326**...........each **$11.60**

No. 226 C & L Heavy Duty Blowtorches

2-Quart Capacity—For Gasoline or Kerosene

Produces 10-inch blast flame which may be regulated to small size.

Blunt control needle, removable jet block and detachable cleaner pin.

Large automatic pump. Brass tank. Fills at bottom.

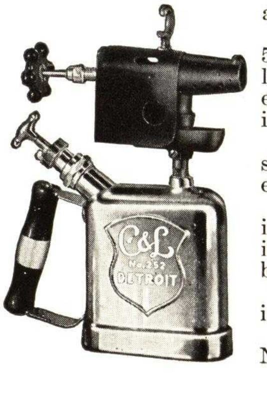
Regularly supplied for burning gasoline. Kerosene may be used by changing jet block and cleaner pin. Specify when ordering if kerosene is to be used.

Shipping weight, 7 pounds.

No. **226**...........each **$14.80**

No. 252 C & L Tool Kit Blowtorches

1-Pint Capacity—For Gasoline



Convenient to carry in tool kit and to use in close places.

Burner produces powerful flame, 5½ inches long which may be regulated. It is equipped with nonenlargeable orifice and self-cleaning tip on control needle.

Flat tank is leakproof and is so shaped that it will not tip over easily. Fills at bottom.

Kerosene may be used by changing jet block and cleaner pin. Specify when ordering if kerosene is to be used.

Thickness, 2 inches. Length, 5 inches. Height, 9½ inches.

Shipping weight, 4½ pounds.

No. **252**...............each **$9.30**

C & L Mechanic's Standard Blowtorches

No. 32A, 1-Quart Capacity—No. 238, 1-Pint Capacity
For Gasoline or Kerosene

C&L
No. 32A
DETROIT

Has a powerful steady blue flame 7 inches long, which can be reduced to a small flame for light work.

Burner has blunt control needle.

Generator, weather protected with full skirted heavy windshield securely fastened. Heavy gage brass tank. Bottom filled. Automatic pump.

Regularly supplied for burning gasoline. Kerosene may be used by changing jet block and cleaner pin. Specify when ordering if kerosene is to be used.

No.	**32A**	**238**
Each	**$9.60**	**7.60**
Capacity	1 Qt.	1 Pt.
Ship. Wt.......pounds	5	4¼

No. 144A C & L Mechanic's Blowtorches

1-Quart Capacity—For Gasoline or Kerosene

C&L
No. 144A
DETROIT

Self-cleaning burner with blunt control valve.

Produces an excellent flame, 6¾ inches long, of suitable volume for ordinary work. Flame smoothly regulated from high to low.

Burner is protected with a light snap-on windshield. Heavy gage brass tank. Bottom filled. Automatic pump.

Regularly supplied for burning gasoline. Kerosene may be used by changing jet block and cleaner pin. Specify when ordering if kerosene is to be used.

Shipping weight, 4¾ pounds.

No. **144A**..............each **$7.60**

C & L Blow Torches

No. 158A, 1-Quart Capacity—No. 160A, 1-Pint Capacity
For Gasoline

C&L
No. 158A
DETROIT

Bronze burner is made with back flow super-heating vein which generates an intensely hot, well controlled, blue flame 6½ inches long.

Control needle is made with a sharp point and provided with a shoulder to prevent orifice enlargement. Equipped with a windshield. Concave bottom serves as a funnel in filling. Heavy gage brass tank. Quick acting automatic pump.

No.	**158A**	**160A**
Each	**$6.10**	**6.10**
Capacity	1 Qt.	1 Pt.
Ship. Wt..pounds	4¾	4

C & L Gasoline Blowtorches

For odd jobs under ordinary weather conditions. Has a good sized hot, blue flame 6½ inches when wide open.

C&L
No. 600A
DETROIT

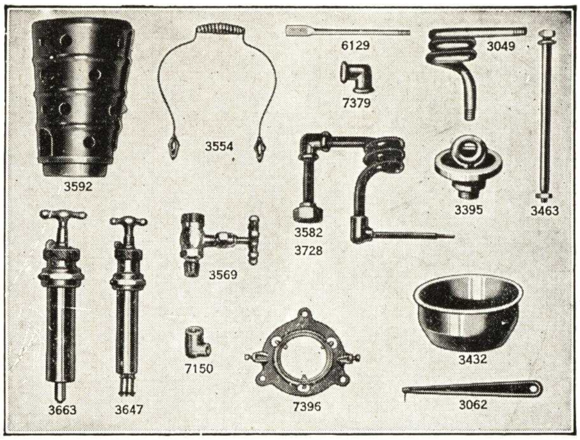
The sharp point control needle is provided with a shoulder to resist orifice enlargement.

Heavy brass tank, strongly reinforced, has a concave bottom fitted with a filler plug.

Control valve wheel is made of a heat resisting composition. Burner is made with a backflow generator and has a tapered burner tube closed at the back.

No.	**600A**	**700A**
Each	**$5.60**	**5.60**
Capacity	1 Qt.	1 Pt.
Shipping Wt....lb.	4½	3¾

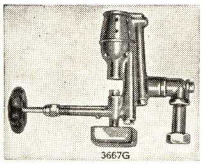
Parts for C & L Nos. 22-A and 50-A Coil Fire Pots



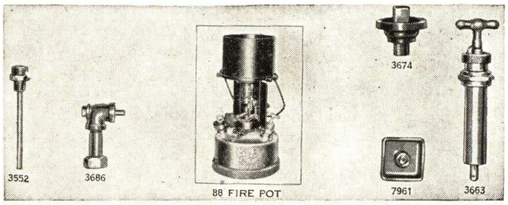
No.	Description	Each
3049	Coil with Wires	$1.70
3582	Coil Unit for No. 22-A	3.85
3728	Coil Unit for No. 50-A	3.85
7379	Coil Conn. Ell	.50
7150	Coil Burner Jet Ell	.40
6129	Burner Jet	.40
3062	Jet Cleaner	.30
3592	Coil Cup (Hinged Door)	1.00
7396	Top Plate	1.50
3463	Upright with Nuts	.30
3554	Handle with Ears	1.00
3569	Valve	2.00
3395	Filler Plug	1.50
3432	Plumbers' Shield	$1.50
3663	Pump Comp. (Large for No. 22-A)	5.00
3755	Pump Comp. (Small for No. 50-A) Replaces No. 3647	3.70
7661	Cup Leather Washer (Large Pump)	.10
8037	Cup Leather Washer (Small Pump)	.10
6422	Check Valve Cork Seat (Round)	.05
6551	Check Valve Cork Seat (Square)	.05

C & L Fire Pot Parts

For No. 88 Fire Pots



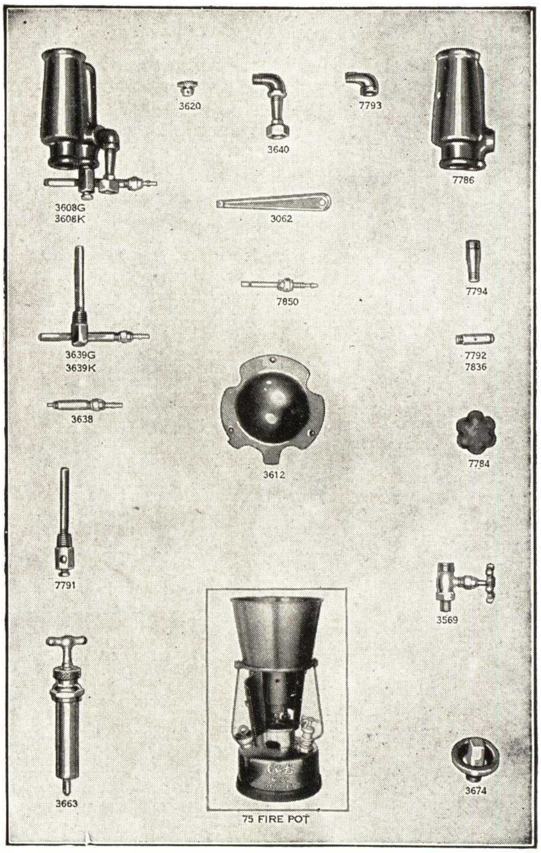
7965
8031
3008



No.	Description	Each
3667G	Burner Complete with Union Nut for Gasoline	$13.70
3693	Burner Only (Less Part No. 3686) for Gasoline	11.25
7965	Burner Jet for Gasoline	.40
8031	Burner Jet for Kerosene (.018-Inch Orifice)	.40
3686	Burner Tee with Vein Tube, Tail-Piece and Union Nut	3.50
3739	Vein Rod (Long)	1.20
3738	Vein Rod (Short)	.90
3687	Burner Needle and Stuffing Box	2.00
3008	Stuffing Box	.40
7961	Priming Cup	1.00
3062	Jet Cleaner	.30
3552	Male Tail-Piece with Union and Dip Tube	.95
3663	Pump Complete, 1-Inch O.D.	5.00
3674	Filler Plug	1.50
3688	Top Plate and Handle	5.00
6177	Top Shield (8-Inch Diameter)	4.00

C & L Fire Pot Parts

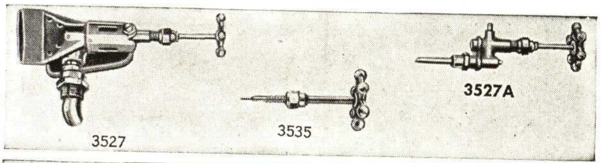
For Nos. 75, 76, 77 Fire Pots

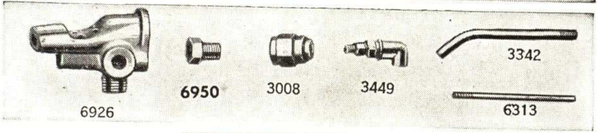


No.	Description	Each
3608G	Burner Complete for Gasoline	$11.20
3608K	Burner Complete for Kerosene	11.20
3639G	Back Burner Unit with Vein Tube for Gasoline	7.50
3639K	Back Burner Unit with Vein Tube for Kerosene	7.50
3653	Burner Jet and Screw for Gasoline	1.50
3637	Burner Jet and Screw for Kerosene	1.50
7786	Burner Body Only	4.75
3640	Burner Ell, Nipple and Union Nut	2.80
7793	Burner Ell	.45
7794	Burner Nipple and Wire Strainer	1.35
3683	Union Nut with Nipple and Wire Strainer	1.80
3749	Vein Tube with Burner Jet Holder	2.00
3638	Regulating Valve	3.50
7850	Needle with Stuffing Box	2.00
3620	Knob and Chain for Regulating Valve	2.00
3062	Jet Cleaner	.30
7802	Drip Pan	1.00
3569A	Supply Valve	2.00
7157	Dip Tube in Tank	.35
3663	Pump Complete, 1-Inch Outside Diameter	5.00
3674	Filler Plug	1.50
3611	Top Shield for No. 75 Fire Pot	6.50
3615	Tinners Hood with Cover (10-Inch Diameter)	10.00
6177	Top Shield for No. 77 Fire Pot (8-Inch Diam.)	4.00
3689	Top Plate and Handle for Nos. 75 or 76	5.00
3690	Top Plate and Handle for No. 77 Fire Pot	5.00

Parts for C & L Fire Pots

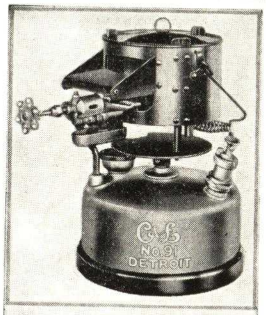
For No. 91 Fire Pot





6928

3395


NO. 91 FIRE POT

3663

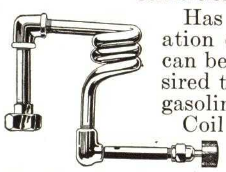
Part No.	Description	Each
3527	Burner Complete with Swivel	$7.70
3527A	Back Burner and Needle	4.15
3535	Needle with Cleaner Tip	1.50
3588	Cleaner Stem and Pin (Screws into Needle)	.60
6926	Burner Body (Combustion Chamber)	1.55
3449	Swivel	2.60
6950	Jet Block	.40
3008	Stuffing Box	.40
3574	Vein Cleanout Plug and Nut	.20
3342	Feed Pipe with Wires	1.00
6313	Dip Tube	.35
6928	Priming Cup	.50
3395	Filler Plug	1.50
3663	*Pump Complete—Large (1-Inch O.D.)	5.00
7755	Pump Complete—Small (¾-Inch O.D.)	3.70
3330	Hood or Top Section with Cover	7.50
3332	Hood Cover	1.00

*Will ship large pump unless small is specified.

C&L Coiltrol Generating Coil Units

For C&L Coil Fire Pot Nos. 44A and 44-88

Conversion Unit for Nos. 22A and 12A



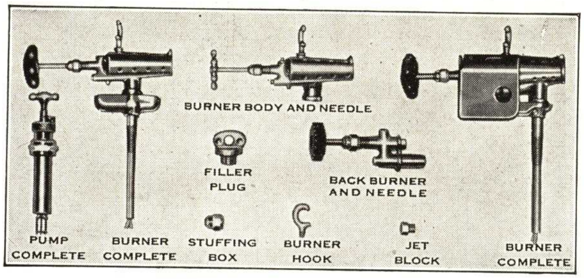
Has flame control device permitting variation of flame in size and volume. Metal can be rapidly melted and then held at desired temperature until needed. Conserves gasoline and reduces oxidation of metal.

Coil is of special steel tubing, free from scale.

No.	Description		Price
No. 3741G,	Coiltrol Unit for Gasoline	each	$4.58
No. 3741K,	Coiltrol Unit for Kerosene	each	4.58
No. 3740G,	Burner Jet and Valve for Gasoline	each	2.00
No. 3740K,	Burner Jet and Valve for Kerosene	each	2.00
No. 8109,	Burner Jet Ell	each	.50
No. 3008,	Stuffing Box	each	.40
No. 3049,	Coil with Wires	each	1.70
No. 7379,	Coil Connection Ell	each	.50
No. 7767,	Connecting Pipe	each	.40

We are as near as your nearest telephone.

Parts for C & L Torches



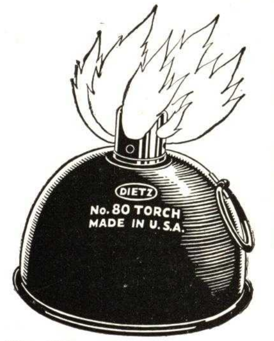
Torch No.	Burner Complete No.	Burner Complete Each	Back Burner & Needle No.	Back Burner & Needle Each	Filler Plug No.	Filler Plug Each	Pump Complete No.	Pump Complete Each
32-A	3607	$8.60	3607A	$5.00	3089	$.90	3756	$3.70
308	3604	11.15	3604A	7.00	3089	.90	3756	3.70
144-A	3695	7.70	3695A	4.15	3089	.90	3756	3.70
326	3662	12.00	.....	....	3089	.90	3755	3.70
226	3698	12.00	.....	....	3089	.90	3663	5.00
238	3713	7.70	3713A	5.00	3599	.90	3756	3.70
252	3714	7.70	3714A	5.00	3599	.90	3756	3.70
99	3731	7.70	3731A	5.00	3599	.90	3756	3.70
158-A	3700	5.15	*3700A	4.05	3089	.90	3757	3.70
160-A	3706	4.70	*3706A	4.05	3599	.90	3757	3.70
600-A	3701	4.70	*3701A	4.05	3089	.90	3756	3.70
700-A	3707	4.70	*3707A	4.05	3599	.90	3756	3.70

*Burner body and needle.

Item		Price
No. 3008, Stuffing Box, Fits All Torches	each	$.40
No. 7172, Burner Hook, Fits All Torches	each	.25
Cleaner Stem and Pin (Give Torch No.)	each	.40
Jet Block (Give Torch No.)	each	.40
Pump Cup Leather Washer (Give Torch No.)	each	.10
Pump Check Valve Cork Seat (Give Torch No.)	each	.05

No. 80 Dietz Highway Flare Torches

With No. 87 Burners



Made of 20-gage steel. Broad, flat bottom and curving fender sides. With rain shield and carrying ring.

Will burn kerosene or light fuel oil: Capacity 80 fluid ounces (2½ quarts); burns over 24 hours. Height, 6⅛ inches; diameter, 7¾ inches. Wick, round, ¾-inch. Enameled gray.

Packed 3 in carton.

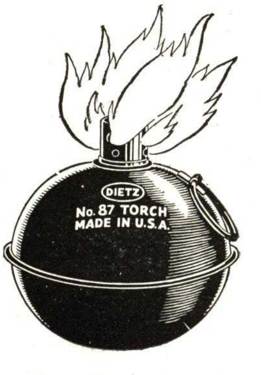
Shipping weight 8 pounds.

Item		Price
No. 80	per dozen	......
Torch Wick ¾x18 Inches	per dozen	......

No. 87 Dietz Highway Flare Torches

Kerosene or Light Fuel Oil

Capacity 3 Quarts—Burns More Than 30 Hours



Made of steel with double seamed and sealed joint.

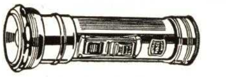
Bottom weighted.

Burner made of heavy steel. With side carrying ring.

Height, 8 inches; diameter, 8 inches; wick, ¾ inch. Grey enamel finish.

Packed 3 in a carton; weight, 5⅝ pounds, each.

No. F22 Burgess Range Finder Flashlights



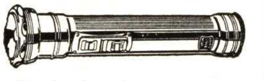
2-Cell—Thumb Focusing Type

Chromium finish.
Has 500-foot range; 3-way switch.
Size, 6¾x1¾ inches.

Packed 10 in corrugated package, with 50 No. 2 Uni-Cels; weight, 15½ pounds.

No. **F22**, with Battery and Lamp	each	**$1.59**
No. **2**, Uni-Cel Battery	each	**.10**
No. **14**, Lamp	each	**.09**

No. F23 Burgess Flashlights



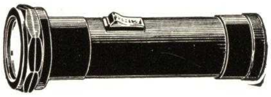
3-Cell—Thumb Focusing Type

Chromium finish.
Has 800-foot range.
Size, 9⅛x1¾ inches.

Packed 10 in corrugated package, with 50 No. 2 Uni-Cels; weight 17 pounds.

No. **F23**, with Battery and Lamp	each	**$2.10**
No. **2**, Uni-Cel Battery	each	**.10**
No. **13**, Lamp	each	**.09**

Burgess Safety-Lite Flashlights

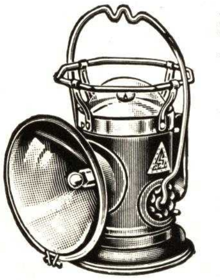


Insulated throughout with a Neoprene cushioned head, fiber covered barrel, and molded end cap. An under construction of heavy drawn brass completes a strong, durable case.

Prefocused lamp is used to obtain a perfect spot. Clip hanger. Unbreakable lens.

No.	**82**	**83**
Each, Complete with Cells and Lamps	**$2.15**	**2.65**
Size, inches	7⅛x1¾	9¼x1¾
Number of Cells	2	3
Uses G-E Lamp No	PR2	PR3

No. A1530 Delta Powerlite Electric Lanterns



This lantern emits a piercing, 800-foot beam at front; floodlight at top. Two lights are under instant finger-tip control from same switch.

Operates on standard 6-volt lantern battery; 80 to 100 hours battery life.

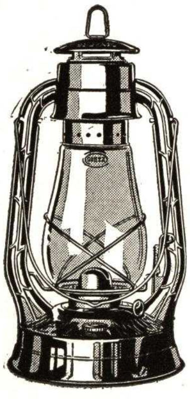
Hangs by bail; hooks over nail in wall. Bail reverses for floodlight down. Finished in two-tone gray enamel.

Packed individually in carton.

Weight each, 2½ pounds.

No. **A1530**, without Battery	each	**$3.95**

No. 2 Dietz Blizzard Streamline Lanterns



Cold Blast—For Kerosene

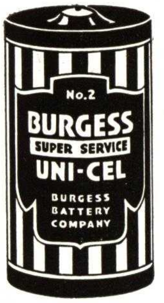
For contractors requiring lanterns of high lighting power.

Uses 150° kerosene. Fitted with Dietz Fitzall Loc-Nob Globes.

Made of terne plate, finished in gray enamel.

Height Overall	inches	**14¾**
With White Globes	per dozen	....
With Ruby, Blue or Green Globes	per dozen	....
Volume of Light by Test	cp.	10
Size of Wick	inches	1
Fount Capacity	hours	45
Patented Steel Burner, No.		272

Burgess Flashlight Uni-Cels

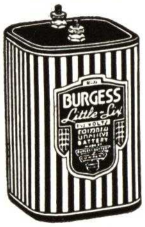


The results of careful planning and scientific research are reflected in Burgess Uni-Cels.

Each size is a model for long life, bright light, dependability and economy.

	Baby Tubular	**Std. Tubular**
No.	**1**	**2**
Each	**$.10**	**.10**
Size, inches	1⅞x1	2 5/16x1 5/16
Unit Package	12	48
Weight per Unit Package, pounds	1¼	10.6

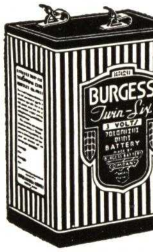
Burgess General Utility Batteries



No. 4FH

No. 4FH. Little-Six, 1½ volts, replaces one round No. 6. Capacity rating is 40 watt-hours under typical service on ignition systems, in lanterns, instruments, and general service.

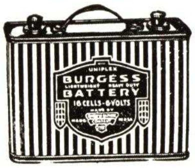
No. 4FA. Little-Six Radio A Type, 1½ volts, is recommended for the filament lighting of dry cell vacuum tubes.



No. 4F2H

No. 4F2H. Twin-Six 3-volt battery replaces two old type No. 6 cells in service. Assembled in one case, it consists of two Little-Six batteries connected in series to produce 3 volts. Ease of handling and only two connections save time and prevent mistakes.

No. 4F3H. Tri-Six 4½-volt battery replaces three old type No. 6 cells in service, and gives full equivalent electrical capacity.



No. 4F4H

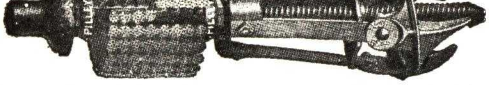
No. 4F4H. Uniplex 6-volt battery is assembled in a rugged waterproof metal container. Rated capacity, 160 watt-hours.

No. 4F5H. A 7½-volt ignition battery in a metal container. Comparatively small and light in weight.

No. 4F6H. A 9-volt ignition battery which is light, rugged, and built in a metal container.

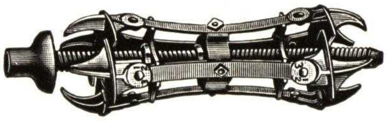
No.	Each	Size Inches	Weight Pounds	Std. Pkg.	Wt. Lb. Std. Pkg.
4FH	**$.45**	4 5/16x2⅝ x2⅝	1⅜	20	29
4FA	**.45**	4 5/16x2⅝ x2⅝	1⅜	20	29
4F2H	**1.05**	5 5/16x3 13/16x2⅝	2¾	15	43½
4F3H	**1.30**	5 5/16x3 15/16x3 13/16	4⅛	9	40
4F4H	**1.85**	6⅜x8¼ x2¾	6¼	6	39½
4F5H	**2.35**	6⅜x7 13/16x4	7 11/16	6	48
4F6H	**2.90**	6⅜x8½ x4	9 3/16	6	57

No. 550 Pilley Combination Flue Brushes and Scrapers



For Tubes, 2 to 6 Inches	per diameter inch	**$1.00**

No. 570 Pilley Engineer's Favorite Flue Scrapers

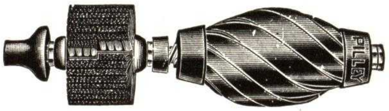


Sizes are for outside diameter of tubes from 1¾ to 6 inches.

Shipping weight, per inch, 1 pound.

No. **570**	inch diameter	**$1.00**

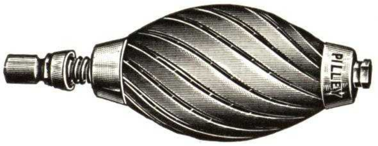
No. 564 Pilley Elliptical Scrapers with Brush



Fits tubes from 2 to 6 inches.

No. **564**............................per diam. inch **$1.00**

No. 565 Pilley Elliptical Scrapers

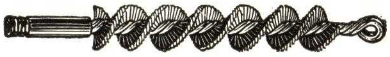


Made for 1½ to 6 inch flues.

Sizes smaller than 2 inches same price as 2-inch.

Per Diam. In. . **$1.00**

No. 592 Pilley Flat Wire Condenser Tube Brushes



An effective and stiff cleaner. For use particularly where hard substances must be removed.

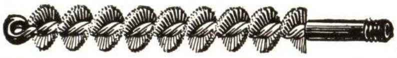
Made of flat steel wire, on a strong center rod.

Made in all sizes, in sixteenths, from ¾ inch actual diameter, to 2 inches. Sizes under 1 inch have ⅛-inch pipe connection; sizes over 1 inch have ¼-inch pipe connection.

Order according to inside diameter of tubes.

No. **592**.....................................each **$1.00**

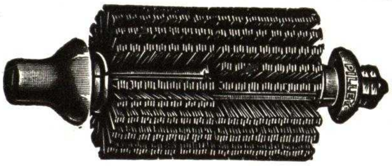
No. 593 Pilley Condenser Pipe Brushes



Made of fine round wire on a twisted wire center. Used in tubes where the accumulations in the tube are not of a hard substance. Made in all sizes in 16ths from ½ to 2 inches, actual diameter. Sizes over 1 inch have ¼-inch pipe connections; sizes under 1 inch have ⅛-inch pipe connection.

No. **593**.....................................each **$1.00**

No. 555 Pilley Improved Expansion Flue Brushes

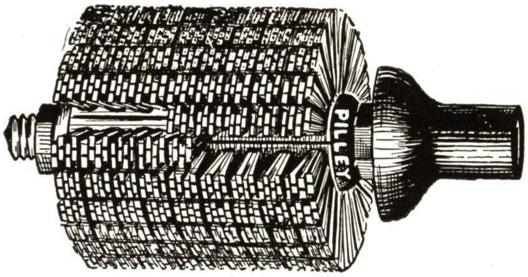


For Tubes ......in. **1½ to 9**

Per Diameter Inch....... **$1.00**

Sizes smaller than 2 inches same price as 2 inches.

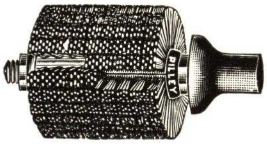
No. 575 Pilley Abrams Flue Brushes



Made on a steel center with flat steel wire.
Made to fit all sizes of flues from 2 to 6 inches.
Shipping weight about 8 ounces per diameter inch.

No. **575**.........................per diameter inch **$1.00**

No. 580 Pilley Kleen Tube Flue Brushes



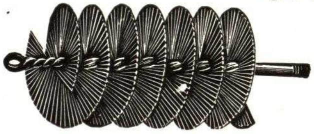
Made for 6 to 6 inch flues.

Made on a steel center and filled with round steel wire.

No. **580**...............................per diam. inch **$1.00**

No. 585 Pilley Flue Brushes

Single Spiral



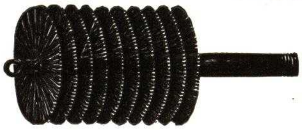
Made of tempered flat steel wire. Made to fit all sizes of tubes from 1 to 6 inches in diameter. Equipped with ¼-inch nipple.

No. **585**..per diam. in.**$1.00**

Sizes smaller than 2-inch diameter, same price as 2-inch.

No. 589 Pilley Round Steel Wire Flue Brushes

Single Spiral

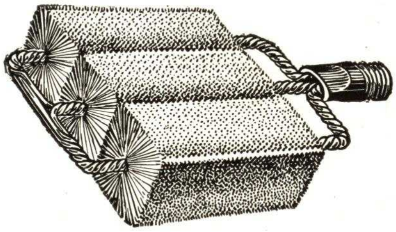


Made to fit all sizes of flues from 1 to 6 inches.

No. **589**. .per diam. in.**$1.00**

Sizes smaller than 2 inch, same price as 2 inch.

Pilley Flue Brushes

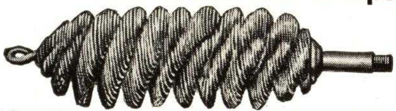


For all large boilers, such as Mercer, Royal, Hart & Crouse, etc.

Fine round steel wire, ½-inch pipe nipple.

No......................	**6281**	**6282**	**6283**	**6284**
Size...............inches	2x7x8	2¼x7x8	2½x7x8	2¾x7x8
Each....................	**$3.00**	**3.35**	**3.65**	**4.00**

No. 599 Coil Brush and Scraper

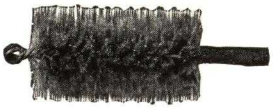


Made of fine flat steel wire to fit all sizes of flues from 1¼ to 4 inches.

No. **599** ....per diameter inch **$1.00**

Sizes smaller than 2 inches same price as 2-inch.

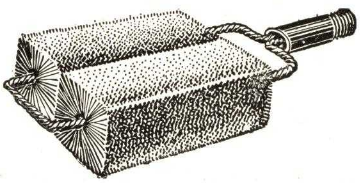
No. 610 Pilley Flue Brushes



Made of fine round steel wire, mounted on twisted wire center. Brush part 4½ inches long. Length over all, 7½ inches. Has ¼-inch pipe connection. Made in all sizes from 1 to 6 inches actual diameter.

No. **610**.......................................per inch **$1.00**

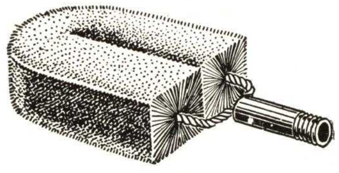
Pilley Heating Boiler Brushes



Made of fine round steel wire, with ¼-inch pipe connection.

No.	Each	Size, In.
6261	$1.00	1¾x4½x4
6262	1.25	2 x4½x4
6263	1.50	2½x6 x4½
6264	1.75	2¾x6 x4½

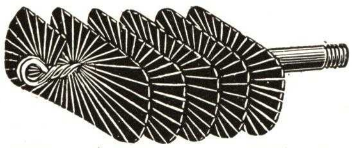
Pilley Wire Boiler Brushes



Made of fine round steel wire. Has ¼-inch pipe connection.

No.	Each	Size, Inches
6271	$1.50	1¾x4½x6
6272	2.00	2 x4½x6
6273	2.50	2½x6 x6
6274	3.00	2¾x6 x6

Pilley Oval Spiral Flat Steel Wire Flue Brushes

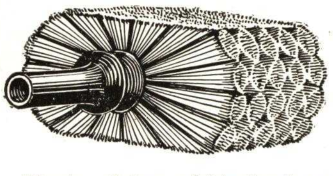


Nos. 6121, 6123, and 6126 are especially adapted for Arco Ideal Boilers Nos. 1, 2, and 3. Other sizes for use on Capitol, Continental, and other sectional Boilers. Has ¼-inch pipe nipple.

No.	Each	Size, Inches
6121	$.80	1⅜x3¼x3¾
6122	.90	2 x3¼x3¾
6123	1.00	2 x3¾x4¾
6124	1.10	2½x3½x4¾
6125	1.20	2½x4 x4¾
6126	1.30	2¾x4½x6

No. 620 Pilley Oblong Brushes

For Cleaning Hot Water and Steam Heaters



Extra strong brush built to stand rough usage and to give long service.

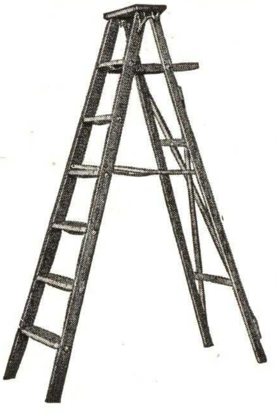
The brush is made on an iron center. The wires are guaranteed not to pull out or lay over.

The brush has a ⅜-inch pipe connection.

Special sizes and shapes made to order.

Size In.	Each	Size In.	Each	Size In.	Each
2 x5	$2.00	3x6	$2.50	4x5½	$2.90
2½x5	2.15	3x6½	2.60	4x6	3.00
3 x5	2.30	3x7	2.70	4x6½	3.10
3 x5½	2.40	4x5	2.80	4x7	3.20

No. QTY Heider Quality Step Ladders



Legs are well braced, braces held firmly in place by metal stampings. Top board held in place by malleable castings. Every step supported with block and ¼-inch truss rod which passes through eye in malleable casting and through riser which holds ladder firmly together. Bucket shelf supported by rod that passes through bucket shelf.

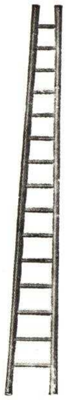
Made of selected spruce ladder stock. Aluminum metal parts.

Made in lengths of 4, 5, 6, 7, 8, 10, 12, 14 and 16 ft.

Weight per foot, 3½ pounds.

No. QTY.........per ft. **$1.10**

Heider Taper Straight Ladders



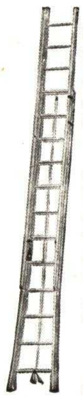
Side rails are made of highest grade selected spruce ladder stock with hickory rungs. Each side rail is sanded on all sides to insure smooth finish. Rungs are chucked with square shoulder which is tenoned into side rails. Rung does not extend through side rail; consequently joint is protected from drying out or decaying.

Sides of ladder are cut tapered and rungs graduated in length to make correct taper in ladder.

Made in lengths of 10, 12, 14, 16, 18 and 20 feet.

No. T, without Rod under Rungs or Rails; Wt. per Ft., 1¾ Lb................per ft.	**$.85**
No. TR, with Rod under Each Rung (No Rod under Rails); Wt. per Ft., 2 Lb.....per ft.	**.90**
No. TOR, with Rod under Each Rail (No Rod under Rungs); Wt. per Ft., 2 Lb....per ft.	**.90**
No. TRR, with Rod under Each Rung and under Each Rail; Wt. per Ft., 2¼ Lb. per ft.	**.95**

Heider Automatic Extension Ladders



Sides of top section rest directly on sides of bottom section releasing all strain from rungs. This mades a strong ladder, lightweight and conveniently handled. It can be easily raised or lowered from ground with rope and pulley, which is furnished. It can be taken apart and used as two separate ladders.

Made with spruce sides with hickory rungs.

No. E, without Rod under Rungs or Rails; Wt. per Ft., 2¼ Lb................per ft.	**$1.10**
No. ER, with Rod under Each Rung (No Rod under Rails): Wt. per Ft., 2½ Lb...per ft.	**1.15**
No. EOR, with Rod under Each Rail (No Rod under Rungs); Wt. per Ft., 2½ Lb..per ft.	**1.15**
No. ERR, with Rod under Each Rung and under Each Rail; Wt. per Ft., 2¾ Lb..per ft.	**1.20**

Deduct 3 cents per foot if rope and pulley are not desired.

Galvanized Steel Sheets

Gage Referred to Is Galvanized Sheet Gage

No. 10 Gage

Wt. per Sq. Ft., 5.781 Lb.

Size Inches	Net Extra for Size	Estimated Wt. Lb. per Sheet
30x 96	—$.50	115.6
30x120	— .50	144.5
36x 96	— .50	138.8
36x120	— .50	173.4
42x 96	— .45	161.8
42x120	— .45	202.3
48x 96	— .30	185.0
48x120	— .30	231.2

No. 12 Gage

Wt. per Sq. Ft., 4.531 Lb.

30x 96	—$.40	90.6
30x120	— .40	113.3
36x 96	— .40	108.8
36x120	— .40	135.9
42x 96	— .35	126.8
42x120	— .35	158.7
48x 96	— .20	145.0
48x120	— .20	181.2

No. 14 Gage

Wt. per Sq. Ft., 3.281 Lb.

30x 96	—$.30	65.6
30x120	— .30	82.0
36x 96	— .30	78.8
36x120	— .30	98.4
42x 96	— .25	91.9
42x120	— .25	114.8
48x 96	— .10	105.0
48x120	— .10	131.2

No. 16 Gage

Wt. per Sq. Ft., 2.656 Lb.

Size Inches	Net Extra for Size	Estimated Wt. Lb per Sheet
24x 96	—$.25	42.5
24x120	— .25	53.1
28x 96	— .25	49.6
28x120	— .25	62.0
30x 96	— .25	53.1
30x120	— .25	66.4
36x 96	— .25	63.8
36x120	— .25	79.7
42x 96	— .20	74.4
42x120	— .20	93.0
48x 96	— .05	85.0
48x120	— .05	106.2

No. 18 Gage

Wt. per Sq. Ft., 2.156 Lb.

24x 96	—$.15	34.5
24x120	— .15	43.1
26x 96	— .15	37.4
26x120	— .15	46.7
28x 72	— .15	30.2
28x 84	— .15	35.2
28x 96	— .15	40.2
28x108	— .15	45.3
28x120	— .15	50.3
30x 96	— .15	43.1
30x120	— .15	53.9
36x 96	— .15	51.8
36x120	— .15	64.7
42x 96	— .10	60.4
42x120	— .10	75.5
48x 96	+ .10	69.0
48x120	+ .10	86.2

No scrap allowance on galvanized sheets cut to special sizes. Waste retained unless advised to the contrary.

Galvanized Steel Sheets

Gage Referred to is Galvanized Sheet Gage

No. 20 Gage

Wt., per Sq. Ft., 1.656 Lb.

Size Inches	Net Extra for Size	Estimated Wt. Lb. per Sheet
24x 96	—$.10	26.5
24x120	— .10	33.1
26x 96	— .10	28.7
26x120	— .10	35.9
28x 72	— .10	23.2
28x 84	— .10	27.1
28x 96	— .10	30.9
28x108	— .10	34.8
28x120	— .10	38.6
28x144	Base	46.4
30x 96	— .10	33.1
30x120	— .10	41.4
36x 96	— .10	39.8
36x120	— .10	49.7
42x 96	+ .05	46.0
42x120	+ .05	58.0
48x 96	+ .30	53.0
48x120	+ .30	66.2

No. 22 Gage

Wt. per Sq. Ft., 1.406 Lb.

24x 96	—$.05	22.5
24x120	— .05	28.1
26x 96	— .05	24.4
28x 72	— .05	19.7
28x 84	— .05	23.0
28x 96	— .05	26.2
28x108	— .05	29.5
28x120	— .05	32.8
28x144	+ .05	39.4
30x 96	— .05	28.1
30x120	— .05	35.2
36x 96	— .05	33.8
36x120	— .05	42.2
42x 96	+ .30	39.4
42x120	+ .30	49.2
48x 96	+ .60	45.0
48x120	+ .60	56.2

No. 24 Gage

Wt. per Sq. Ft., 1.156 Lb.

24x 96	Base	18.5
24x120	Base	23.1
26x 96	Base	20.0
26x120	Base	25.0
28x 72	Base	16.2
28x 84	Base	18.9
28x 96	Base	21.6
28x108	Base	24.3
28x120	Base	27.0
28x144	+$.10	32.4
30x 96	Base	23.1
30x120	Base	28.9
36x 96	Base	27.8
36x120	Base	34.7
42x 96	+ .45	32.4
42x120	+ .45	40.5
48x 96	+ .75	37.0
48x120	+ .75	46.2

No. 26 Gage

Wt. per Sq. Ft., .906 Lb.

Size Inches	Net Extra for Size	Estimated Wt. Lb. per Sheet
24x 96	+$.25	14.5
24x120	+ .25	18.1
26x 96	+ .25	15.7
26x120	+ .25	19.6
28x 72	+ .25	12.7
28x 84	+ .25	14.8
28x 96	+ .25	16.9
28x108	+ .25	19.0
28x120	+ .25	21.1
28x144	+ .35	25.4
30x 96	+ .25	18.1
30x120	+ .25	22.7
30x144	+ .35	27.3
32x 96	+ .25	19.3
36x 96	+ .25	21.8
36x120	+ .25	27.2
42x 96	+ .90	25.4
42x120	+ .90	31.7
48x 96	+1.25	....
48x120	+1.25	....

No. 27 Gage

Wt. per Sq. Ft., .843 Lb.

24x 96	+$.35	13.5
28x 96	+ .35	15.8
30x 96	+ .35	16.9
36x 96	+ .40	20.3

No. 28 Gage

Wt. per Sq. Ft., .781 Lb.

24x 96	+$.50	12.5
24x120	+ .50	15.6
26x 96	+ .50	13.5
26x120	+ .50	16.9
28x 72	+ .50	10.9
28x 84	+ .50	12.8
28x 96	+ .50	14.6
28x108	+ .50	16.4
28x120	+ .50	18.2
28x144	+ .60	21.8
30x 96	+ .50	15.6
30x120	+ .50	19.5
30x144	+ .60	23.4
32x 96	+ .50	16.7
36x 96	+ .70	18.8
36x120	+ .70	23.4

No. 30 Gage

Wt. per Sq. Ft., .656 Lb.

24x 96	+$1.00	10.5
24x120	+ 1.00	13.1
30x 96	+ 1.00	13.1
30x120	+ 1.00	16.4
32x 96	+ 1.00	14.0
36x 96	+ 1.20	15.8
36x120	+ 1.20	19.7

No scrap allowance on galvanized sheets cut to special sizes. Waste retained unless advised to the contrary.

Follansbee Seamless Terne Roofing

40-Pound Coating—IC

Follansbee Forge
SEAMLESS
PAT. PENDING
ROLL ROOFING

Copper bearing, resquared, all primes.
Supplied painted one side, two sides, or unpainted.

Width Roll	inches	14	20	24	28
Length Roll	feet	50	50	50	50
Approx. Area	square feet	58	83	100	117
Approx. Weight per Roll	pounds	35	50	60	70

Roofing Ternes

40-Pound Coated

Pure open hearth copper content base plate, uniformly coated by the most approved methods, resquared. Coating consists of pure block tin and pure lead. Each sheet stamped with coating weight. Has 40-pound coating per box of 112 sheets; size 20x28 inches.

25-Pound Coated

Resquared and redipped. Has 25-pound coating per box of 112 sheets; size 20x28 inches.

20-Pound Coated

Resquared and redipped. Has 20-pound coating per box of 112 sheets; size 20x28 inches.

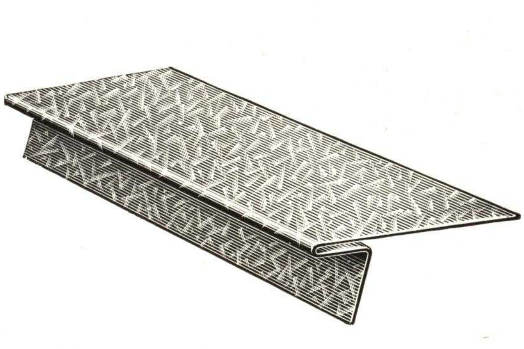
8-Pound Coated

Resquared and redipped. Has 8-pound coating per box of 112 sheets; size 20x28 inches.

Charcoal Tin

Re-annealed plates. Tissue paper between sheets. Size, 20x28 inches.

Milcor Galvanized Eaves Drip and Roof Edging



Milcor Galvanized Eaves Drip and Roof Edging is designed for use with composition roofing, asphalt shingles and similar types of prepared or composition roofing.

These strips of metal protect the soft roofing material from damage and curling at corners; prevent wind and rain from driving in under the gable edge or eaves edge of the roof; prevent rotting of edges of roof; improve the appearance of roofing by forming precisely straight lines at eaves and gables.

Milcor Eaves Drip is 5 inches wide, Milcor Roof Edging is 3 inches wide. Sections overlap wherever two ends join and form a stormtight joint.

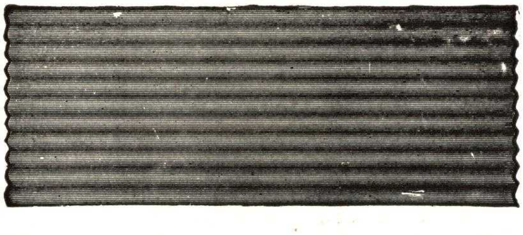
Fabricated from tight-coat galvanized open-hearth steel.

Made in 10 foot lengths.

Packed, 250 feet to a crate.

5-Inch Galv. Eaves Drip	per foot	**$.06**
3-Inch Galv. Roof Edging	per foot	**.045**

Corrugated Steel Roofing and Siding



Sheets are corrugated with standard 2½-inch corrugations and cover 24 inches when placed in position, allowing for lap on each side.

No. 16 gauge and lighter can be furnished with 1¼-inch corrugations. In addition to regular sizes, sheets of any length, or special width up to 42 inches, can be furnished promptly, corrugated with either 1¼-inch or 2½-inch corrugations.

When ordering state length of sheets required. Unless otherwise specified, No. 28 gauge with 2½-inch corrugations will be furnished.

Roofing and Siding can also be furnished in Armco Iron in standard sizes.

Galvanized

Gauge Number	Size Inches	Number of Sheets per Square	Weight Pounds per Square
12	26x 96	5.769	488
	26x120	4.616	488
14	26x 96	5.769	353
	26x108	5.128	353
	26x120	4.616	353
16	26x 96	5.769	286
	26x120	4.616	286
18	26x 72	7.692	232
	26x 84	6.593	232
	26x 96	5.769	232
	26x108	5.128	232
	26x120	4.616	232
20	26x 72	7.692	178
	26x 84	6.593	178
	26x 96	5.769	178
	26x108	5.128	178
	26x120	4.616	178
22	26x 72	7.692	151
	26x 84	6.593	151
	26x 96	5.769	151
	26x108	5.128	151
	26x120	4.616	151
24	26x 72	7.692	124
	26x 84	6.593	124
	26x 96	5.769	124
	26x108	5.128	124
	26x120	4.616	124
26	26x 72	7.692	98
	26x 84	6.593	98
	26x 96	5.769	98
	26x108	5.128	98
	26x120	4.616	98
27	26x 96	5.769	91
	26x120	4.616	91
28	26x 72	7.692	84
	26x 84	6.593	84
	26x 96	5.769	84
	26x108	5.128	84
	26x120	4.616	84

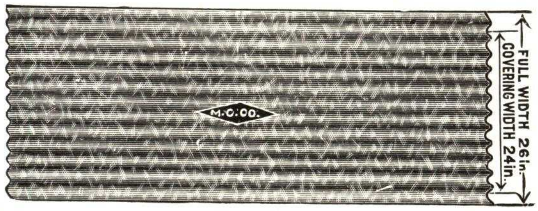
Prices upon application.

Table Showing Square Feet of Corrugated Roofing

Sheets 26 Inches Wide Either 1¼, 2 or 2½-Inch Corrugations, in a Given Number of Sheets of a Given Length. No Allowance for Side or End Lap

No. Sheets	Length of Sheets, Feet						
	6	**7**	**8**	**9**	**10**	**11**	**12**
1	13	15	17	20	22	24	26
2	26	31	35	39	44	48	52
3	39	46	52	59	65	72	78
4	52	61	70	78	87	95	104
5	65	76	87	98	109	119	130
6	78	91	104	117	130	143	156
7	91	107	122	137	152	167	182
8	104	122	139	156	174	191	208
9	117	137	156	176	195	215	234
10	130	152	174	195	217	238	260
11	143	167	191	215	239	262	286
12	156	182	208	234	260	286	312
13	169	198	226	254	282	310	338
14	182	213	243	273	304	334	364
15	195	228	260	293	325	358	390
16	208	243	278	312	347	381	416
17	221	258	295	332	369	405	442
18	234	273	312	351	390	429	468
19	247	289	330	371	412	453	494
20	260	304	347	390	434	477	520
21	273	319	364	410	455	501	546
22	286	334	382	429	477	524	572
23	299	349	399	449	499	548	598
24	312	364	416	468	520	572	624
25	325	379	434	488	542	596	650
26	338	395	451	507	564	620	676
27	351	410	468	527	585	644	702
28	364	425	486	546	607	667	728
29	377	440	503	566	629	691	754
30	390	455	520	585	650	715	780
31	403	470	538	605	672	739	806
32	416	486	555	624	694	763	832
33	429	501	572	644	715	787	858
34	442	516	590	663	737	810	884
35	455	531	607	683	759	834	910
36	468	546	624	702	780	858	936
37	481	562	642	722	802	882	962
38	494	577	659	741	824	906	988
39	507	592	676	761	845	930	1014
40	520	607	694	780	867	953	1040
41	533	622	711	800	889	977	1066
42	546	637	728	819	910	1001	1092
43	559	653	746	839	932	1025	1118
44	572	668	763	858	954	1049	1144
45	585	683	780	878	975	1073	1170
46	598	698	798	897	997	1096	1196
47	611	713	815	917	1019	1120	1222
48	624	728	832	936	1040	1144	1248
49	637	744	850	956	1062	1168	1274
50	650	759	867	975	1084	1192	1300
51	663	774	884	995	1105	1216	1326
52	676	789	902	1014	1127	1239	1352
53	689	804	919	1034	1149	1263	1378
54	702	819	936	1053	1170	1287	1404
55	715	835	954	1073	1192	1311	1430
56	728	850	971	1092	1214	1335	1456
57	741	865	988	1112	1235	1359	1482
58	754	880	1006	1131	1257	1382	1508
59	767	895	1023	1151	1279	1406	1534
60	780	910	1040	1170	1300	1430	1560
61	793	926	1058	1190	1322	1454	1586
62	806	941	1075	1209	1344	1478	1612
63	819	956	1092	1229	1365	1502	1638
64	832	971	1110	1248	1387	1525	1664
65	845	986	1127	1268	1409	1549	1690
66	858	1001	1144	1287	1430	1573	1716
67	871	1017	1162	1307	1452	1597	1742
68	884	1032	1179	1326	1474	1621	1768
69	897	1047	1196	1346	1495	1645	1794
70	910	1062	1214	1365	1517	1668	1820
71	923	1077	1231	1385	1539	1692	1846
72	936	1092	1248	1404	1560	1716	1872
73	949	1108	1266	1424	1582	1740	1898
74	962	1125	1283	1443	1604	1764	1924
75	975	1138	1300	1463	1625	1788	1950
76	988	1153	1318	1482	1647	1811	1976
77	1001	1168	1335	1502	1669	1835	2002
78	1014	1183	1352	1521	1690	1859	2028
79	1027	1199	1370	1541	1712	1883	2054
80	1040	1214	1387	1560	1734	1907	2080
81	1053	1229	1404	1580	1755	1931	2106
82	1066	1244	1422	1599	1777	1954	2132
83	1079	1259	1439	1619	1799	1978	2158
84	1092	1274	1456	1638	1820	2002	2184
85	1105	1290	1474	1658	1842	2026	2210
86	1118	1305	1491	1677	1864	2050	2236
87	1131	1320	1508	1697	1885	2074	2262
88	1144	1335	1526	1716	1907	2097	2288
89	1157	1350	1543	1736	1929	2121	2314
90	1170	1365	1560	1755	1950	2145	2340
91	1183	1381	1578	1775	1972	2169	2366
92	1196	1396	1595	1794	1994	2193	2392
93	1209	1411	1612	1814	2015	2217	2418
94	1222	1426	1630	1833	2037	2240	2444
95	1235	1441	1647	1853	2059	2264	2470
96	1248	1456	1664	1872	2080	2288	2496
97	1261	1472	1682	1892	2102	2312	2522
98	1274	1487	1699	1911	2124	2336	2548
99	1287	1502	1716	1931	2145	2360	2574
100	1300	1517	1734	1950	2167	2383	2600

Milcor Special 1¼-Inch Corrugated Sheets


M.C.CO.
FULL WIDTH 26 in.
COVERING WIDTH 24 in.

Intended for roofing only. Is fireproof, weatherproof, durable and easily erected. The corrugations on one side up and the other side down permit a corrugation and a half side lap which is an extra precaution against leaks.

Furnished in Milcor galvanized or painted sheet steel. Covering width, 24 inches.

When ordering state size, gage and metal wanted. Galvanized sheet steel furnished unless otherwise ordered.

Gages	28	26	24
Weight per Square, Galvanized......lbs.	84	98	125
Weight per Square, Painted......lbs.	68	82	109

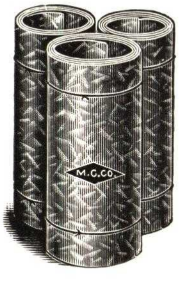
Lengths........ft.	6	7	8	9	10	*11	*12
No. Sq. Ft. per Sheet	13	15 1/16	17⅓	19½	21⅔	23⅚	26

*Non-stock sizes.

Milcor Galvanized Steel Roll Valley

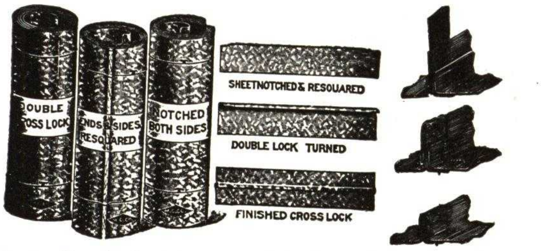
Double Cross Locked

In 50-foot rolls.



Width In.	29 Gage per Ft.	28 Gage per Ft.	26 Gage per Ft.
4	$.09	$.10	$.12
6	.13	.14	.16
8	.16	.17	.19
10	.19	.20	.22
12	.23	.24	.26
14	.26	.27	.30
16	.29	.30	.33
18	.33	.34	.37
20	.36	.37	.41
24	.43	.44	.48
26	.46	.47	.52
28	.49	.50	.55

Milcor Self-Cap Roll Roofing



This roofing is double cross-locked together, notched and resquared on ends and sides. Appropriate for use on buildings with only a slight pitch. Made from soft-annealed sheets so that the side seams form easily without cracking.

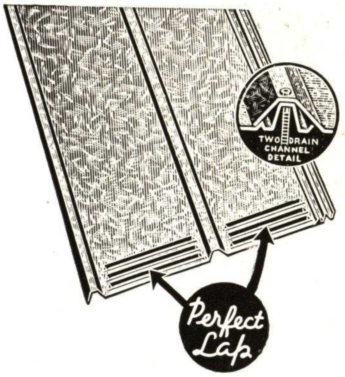
Made from sheets 26¾ inches wide before resquaring. Sheets 26½ inches wide and 50 feet long will cover 100 square feet.

Available in galvanized sheet steel. Sheet steel regularly furnished.

Cleats furnished only when ordered.

Gages	29	28	26
Weight per Square, Galvanized........lbs.	81	88	102

Milcor Perfect Lap Twodrain Channel Roofing



A fireproof roofing and when properly grounded, lightning-proof.

The side lap design provides a tight edge and a metal to metal contact which prevents capillary attractions and blocks water. Provides extra protective ridge forming first seal against leaks, a large channel, high ridge contacting over-lapping sheet and second large channel.

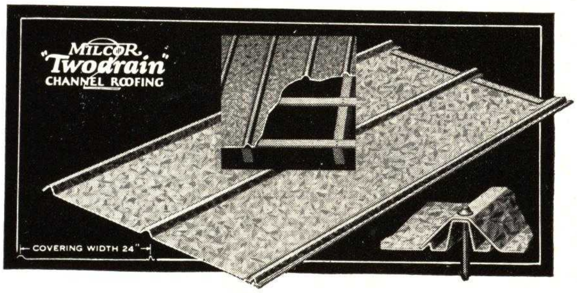
Each of the channels is large enough to carry off as much water as would ever be driven over the first ridge.

Made from prime sheets, with extra heavy zinc coating. Applied with one row of nails, placed in center of channel design at 12-inch intervals.

Furnished in 5, 6, 7, 8, 9, 10, 11 and 12-foot lengths.

Gage No.	26	28	29
Per Square Foot	...	...	...
Weight per Square......pounds	106	91	84

Milcor Twodrain Channel Roofing



Twodrain Channel Roofing is regularly formed from Milcor galvanized steel sheets.

It may be laid directly over rafters or studs with cross strips as effectively as over tightly fitted roof boards and its cost is low enough per square to warrant its use on any building where such a roofing is justified by the use to which it is put.

This roofing is made in 3-V style, both plain and ornamental, with "V" formations on 12-inch centers.

Each sheet covers 24 inches and is sold on a basis of coverage. Twodrain Roofing is adaptable to roofs on both large and small buildings.

Nailing of Twodrain Roofing should be straight down through the center of the V-crimp with a 1½-inch lead-headed roofing nail on new roofs. When laying Twodrain over old roofing, 2-inch lead-headed nails should be used. From 1½ lbs. to 2 lbs. of nails will be required per square. The ridges through which the nails are driven are so rigid that they do not require furring sticks as do V-crimp roofings. This makes a better roof at no higher cost.

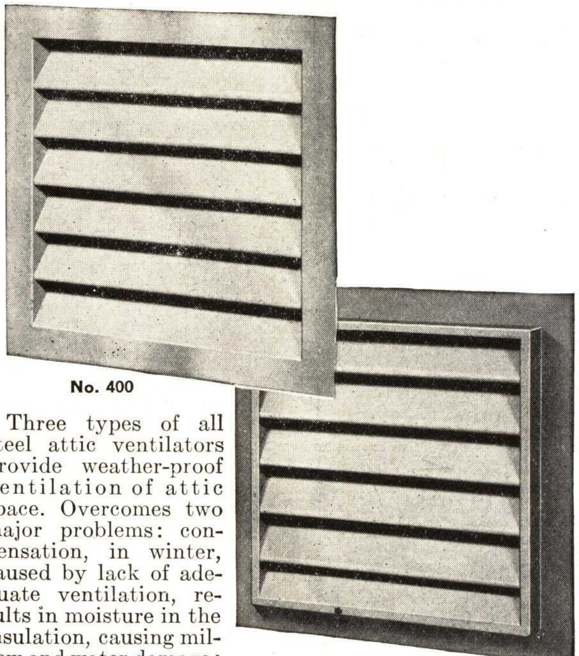
No. of Gauge	29	28	26
Weight per Square Galvanized.........pounds	84	91	106

Prices upon application.

MANUFACTURERS' CATALOGS

We shall be glad to send MANUFACTURERS' CATALOGS and OTHER AVAILABLE PUBLICATIONS AND DATA on request.

Air Control Attic and Roof Ventilators


No. 400

No. 401

Three types of all steel attic ventilators provide weather-proof ventilation of attic space. Overcomes two major problems: condensation, in winter, caused by lack of adequate ventilation, results in moisture in the insulation, causing mildew and water damage; attic heat, in summer, results in severe attic heat and high room temperatures unless properly ventilated.

For Wall Installations

No. 400 Ventilators—flush type—ideal for old or new construction, can be fastened to wood framing or directly onto siding, etc.

No. 401 Ventilators—recessed type—designed for new construction. Recessed margin fastens to sheathing—siding or brick butts against frame.

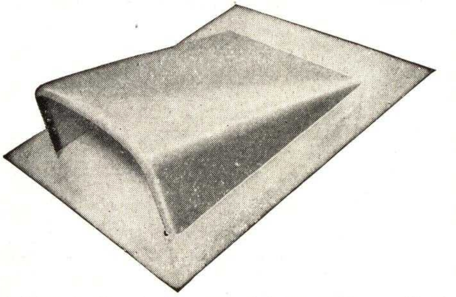
The sharp angle and 2-inch depth of the louvers insures rain elimination.

Built of rust resisting steel with baked primer—equipped with wire screen to keep out insects—glass or sheet metal can be inserted in back of louvers to close the opening.

Packed 2 in a carton.

Opening Size, Width by Height.........inches	8x8	8x16	12x12	12x18	14x24
No. **400**............each	**$1.35**	**$1.70**	**$1.50**	**$1.90**	**$2.40**
No. **401**...........each	**1.50**	**1.90**	**1.65**	**2.10**	**2.65**
Overall Size, Width by Height.........inches	11x11	11x19	15x15	15x21	17x27
Weight..........pounds	....	....	.....	.....	.....

No. 402 Roof Ventilators



A necessity with four-way roofs. Used with any kind of roofing, it provides adequate ventilation and eliminates snow, sleet, and rain.

A screen insert keeps out insects—large 13½x4-inch opening provides ample ventilation—stamped in one piece to eliminate troublesome seams and joints.

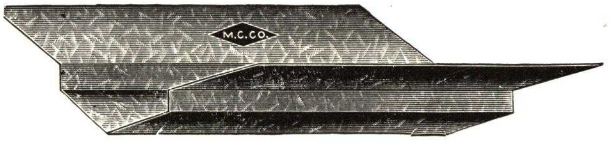
Made of finest steel with rust-inhibiting coating. Streamline design.

Installed by nailing over roof opening—wide flanges are set under shingles.

Opening size, 13½x4 inches. Overall size, 21¼x19½ inches. Packed 2 in a carton.

No. **402**.............................. each	**$2.50**

Galvanized Formed Valleys

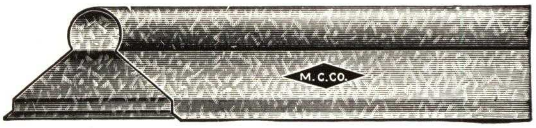


Made in 10-foot lengths. It is seamless. Crated 250 feet.

A charge of 1 cent net per foot in addition to crating charge, at cost, will be made when shipped in less than crate lots.

Size..............................inches	14	16	20
28 Gage.................per lineal foot	**$.40**	**$.46**	**$.58**
29 Gage.................per lineal foot	**.32**	**.38**	**.48**

Plain Steel Ridge Roll with Nailing Flanges

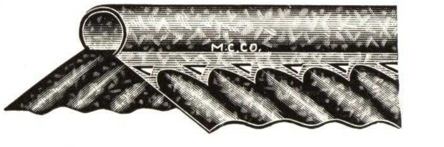


Made in 10-foot lengths.

Bundled 100 feet per bundle.

Girth.........................inches	7	8	10
29-Gage.....................per foot	**$.15**	**$.17**	**$.19**
28-Gage.....................per foot	**.16**	**.18**	**.20**
26-Gage.....................per foot	**.21**	**.23**	**.24**
Size Roll.....................inches	1¼	1½	2

Milcor Corrugated Ridge Roll

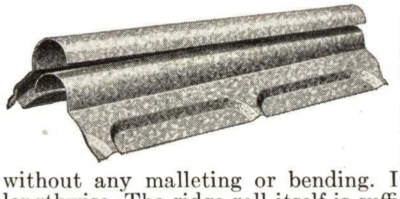


Made in 26 and 120-inch lengths.

Size.................................inches	1¼	2½
28 Gage, Painted...............per lineal foot	**$.14**	**$.14**
Std. Gage, Galvanized...........per lineal foot	**.15**	**.15**

Milcor Twodrain Adjustable Ridge Roll

For Twodrain Channel Roofing



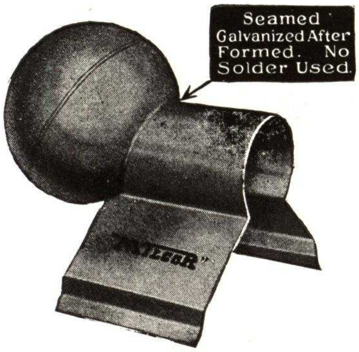
This ridge roll was especially developed as a finishing touch to a Twodrain roof.

Made in 2 pieces, it is readily adjusted to the slope of any roof, fitting perfectly without any malleting or bending. It is also adjustable lengthwise. The ridge roll itself is sufficiently long and has enough hook, so that there will never be the least danger of leakage even from wind-driven rain. The ridge roll apron fits over the ridges of Twodrain Channel Roofing and the design ends each strip of roofing in a sunken panel, the border of panel of the same height as the ridges.

Furnished in 26 and 120-inch lengths.

Prices upon application.

Milcor Globe Finials



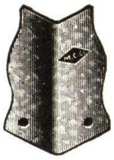
Seamed Galvanized After Formed. No Solder Used.

Globe Finial made from galvanized steel. Has tight fitting ball. Globe Finial furnished for triangular ridge at same prices.

Specify No. 5 for plain ridge roll. No. 6 for 2-drain adjustable ridge roll.

Size Roll Inches	Per Dozen	Ball Diam. Inches
1¼	$4.00	2½
1½	4.00	2½
2	5.00	3½

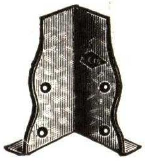
Milcor Metal Building Corners



Outside Corner

Made of tight-coat galvanized steel. Furnished with plain or beaded edges and countersunk nail holes. Used to finish corner of building when lap siding is used.

No. 14 is for drop siding only.



Inside Corner

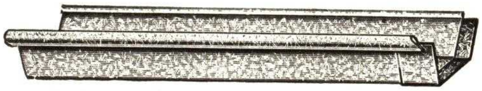
Outside corners packed 500 in box; inside 250 in box.

No.	Per 1000	Length Sides Inches	Shipping Weight Pounds per 1000
*4	$24.00	4	60
*5	26.00	5	70
*6	28.00	6	80
†8½	40.00	8	100
†10½	44.50	10	125
*14	32.00	6	70

*Furnished in ½-inch base.
†Furnished in ½ and ¾-inch base.
Specify base desired when ordering.

Milcor Square Gutters

Galvanized Sheet Steel
16-Ounce Copper,
Slip Joint



Strong, straight, easy to handle.
Made in 10 foot lengths.
Shipped 250 feet to the cartons or 100 feet to the bundle.

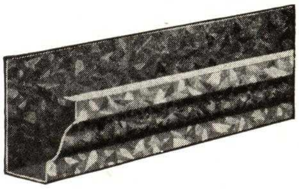
	28-Gage Galvanized			26-Gage Galvanized			16-Ounce Copper		
		Weight, Lb. Per 1000 Ft.			Weight, Lb. Per 1000 Ft.			Weight, Lb. Per 1000 Ft.	
Size In.	Per Ft.	Carton	Bundled	Per Ft.	Carton	Bundled	Per Ft.	Carton	Bundled
4	$.21	625	545	$.25	710	630	$.35	775	700
5	.22	760	670	.26	865	775	.39	945	855
6	.28	940	820	.34	1070	950	.49	1170	1050

Lap Joint

Size In.	Per Ft.	Carton	Bundled	Per Ft.	Carton	Bundled	Per Ft.	Carton	Bundled
4	$.19	610	530	$.23	695	615	$.32	760	680
5	.20	740	650	.24	845	755	.36	925	835
6	.26	920	800	.32	1045	925	.46	1140	1020

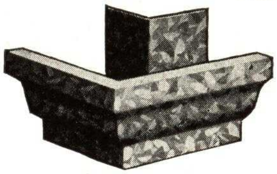
Style K Milcor Roof Gutters, Mitres, Ends and Outlets

Galvanized Steel Gutters Made in 10-Foot Lengths

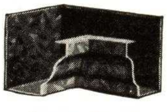


	Gauge No. 28	26	24			
Size In.	per Ft.	per Ft.	per Ft.	Depth In. Front	Back	Girth In.
4	$.20	$.24	$.34	3	2¾	10
5	.25	.31	.40	3¾	3¼	12
6	.35	.43	.53	4¾	4	15
7	.42	.50	.60	5⅜	5	18

Mitres



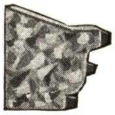
Outside Mitre



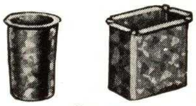
Inside Mitre

Girth.............inches	10	12	15	18
No. 28 Gauge........each	$.50	$.63	$.88	$1.05
No. 26 Gauge........each	.60	.78	1.08	1.25
No. 24 Gauge........each	.85	1.00	1.33	1.50

Ends and Outlets



End Piece



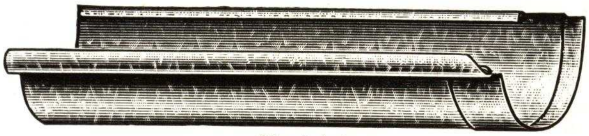
Outlets

Gauge No.	28	26
Each..................................	$.50	$.60

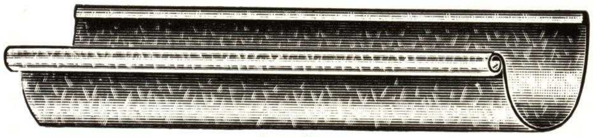
Also made in pure Anaconda copper; prices on request.

Milcor Strate-Edge Eaves Troughs

Galvanized Steel—Single Bead



Slip Joint



Lap Joint

Made in 28, 26 and 24-gage; in 10-foot lengths. Unless otherwise ordered, half right and half left-hand slips furnished.

Shipped, 250 feet to the crate or bundled 100 feet to the bundle.

Slip Joint

	28-Gage			26-Gage			24-Gage		
		Weight, Lb. Per 1000 Ft.			Weight, Lb. Per 1000 Ft.			Weight, Lb. Per 1000 Ft.	
Size In.	Per Lin. Ft.	Wired	Crated	Per Lin. Ft.	Wired	Crated	Per Lin. Ft.	Wired	Crated
4	$.21	555	630	$.25	645	720	$.35	770	850
5	.22	660	745	.26	765	850	.36	915	1090
6	.27	790	910	.33	920	1040	.42	1200	1320
7	.34	925	1050	.42	1075	1200	.52	1300	1425

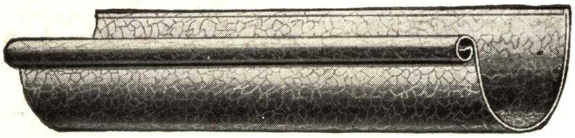
Lap Joint

Size In.	Per Lin. Ft.	Wired	Crated	Per Lin. Ft.	Wired	Crated	Per Lin. Ft.	Wired	Crated
4	$.19	555	630	$.23	640	715	$.33	820	895
5	.20	645	730	.24	745	830	.34	950	1035
6	.25	775	895	.31	895	1015	.40	1145	1265
7	.32	905	1030	.40	1050	1175	.50	1335	1460

Copper troughs can be furnished; prices on request.

Milcor Stratedge Eaves Trough

Slip Joint—Single Bead



Made in 10 foot lengths.

Crated 250 feet to the crate. Half right and half left-hand slips furnished unless otherwise ordered.

Galvanized Steel

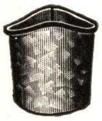
Size	inches	4	5	6	7
28 Gage	per linear foot	$.21	$.22	$.27	$.34
26 Gage	per linear foot	.25	.26	.33	.42
24 Gage	per linear foot	.35	.36	.42	.52

Pure Copper

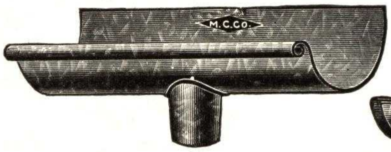
16 Ounces	per linear foot	$.35	$.39	$.47	$.57

Milcor Eaves Trough Drops and Ends

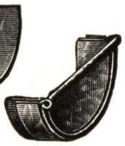
Galvanized Steel



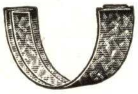
B



D



C



S

Both the ends and outlets are double seamed. They are not soldered, cannot leak or come apart. These pieces are well made, neat in appearance and strong.

Nos. 28 and 26-gage.

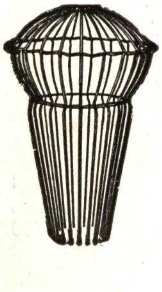
State size and gage.

Size In.	Drop Diam. In.	D Ends Sgl. Bead per Dozen	D Ends Dozen per Carton	D Ends Weight, Lb. Per Carton 28-Ga.	D Ends Weight, Lb. Per Carton 26-Ga.	B Drops Per Dozen	B Drops Dozen per Carton	B Drops Weight, Lb. Per Carton 28-Ga.	B Drops Weight, Lb. Per Carton 26-Ga.
4	2	$3.70	1	7	8	$1.20	5	..	..
4	3	3.70	1	8	9	1.45	5	..	..
5	3	4.25	1	9	10	1.80	5	..	..
5	4	4.25	1	11	12	2.35	5	..	..
6	3	4.90	1	12	13	2.90	5	..	..
6	4 or 5	4.90	1	13	14	....	..	..	..
7	4	5.50	1	14	..	....	..	..	..
		C Ends				S Slip Joints			
4	...	$1.90	5	8	10	$1.50	5	7	8
5	...	2.00	5	10	13	1.60	5	10	12
6	...	2.40	5	13	17	2.00	5	13	14
7	...	2.90	5	18	21	2.60	5	15	16

Copper drops and ends can be furnished; prices on request.

Milcor Conductor Pipe Strainers

A substantial, easily applied strainer. Prevents the rain pipes from clogging and keeps rubbish out of the cistern.



Round Strainers for Round Pipe

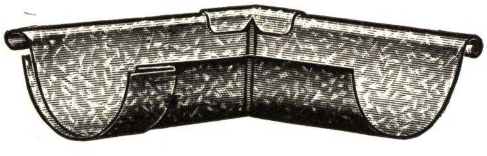
Size In.	Galvanized Wire per Dozen	Copper Wire per Dozen	Weight Pounds per Dozen
2	$.75	$1.80	1 1/16
3	1.05	2.90	3 1/16
4	1.85	4.20	2 7/8
5	2.55	7.20	4 11/16
6	3.00	8.25	5 15/16

Square Strainers for Square Pipe

2x2	$2.25	$3.20	17 1/2 Oz.
2x3	2.90	4.00	22 1/4 Oz.
3x4	4.80	8.00	51 1/2 Oz.
4x5	6.60	10.00	5 3/4

Milcor Eaves Trough Mitres

Single Bead



Slip Joint

The two mitre pieces are brought together by a waterproof, pressed seam which assures uniform smoothness of appearance.

The inner hemmed edge adds materially to the general strength of the mitre.

All mitres are galvanized after formed.

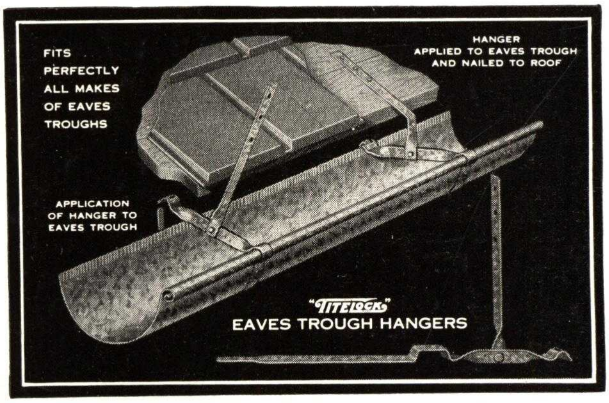
When ordering slip joint mitres, state whether right or left hand is wanted, and whether for inside or outside corner; otherwise half right and half left, and half inside and half outside corner mitres will be supplied.

Lap Joint

Size In.	Dozen per Carton	Outside Mitre Per Dozen	Outside Mitre Wt., Lb. Per Ctn. 28-Ga.	Outside Mitre Wt., Lb. Per Ctn. 26-Ga.	Inside Mitre Per Dozen	Inside Mitre Wt., Lb. Per Ctn. 28-Ga.	Inside Mitre Wt., Lb. Per Ctn. 26-Ga.
4	1	$8.00	6	7	$8.00	5	6
5	1	9.25	9	10	9.25	7	8
6	1	11.75	12	7	11.75	10	11
7	1	15.75	20	21	15.75	17	19
		Slip Joint					
4	1	$11.00	8	9	$11.00	7	8
5	1	12.25	10	12	12.25	9	10
6	1	14.75	14	15	14.75	12	13
7	1	18.75	22	25	18.75	20	22

*Packed to order, but weight is for 1 dozen mitres.

Milcor Titelock Eaves Trough Hangers



FITS PERFECTLY ALL MAKES OF EAVES TROUGHS
HANGER APPLIED TO EAVES TROUGH AND NAILED TO ROOF
APPLICATION OF HANGER TO EAVES TROUGH
"TITELOCK" EAVES TROUGH HANGERS

This hanger is easily and speedily applied. Strap is bent around trough, inserted in slot and tightened into position. The operation requires only a pair of pliers.

The vertical twist of the cross bar gives such strength that hanger can never be bent in the middle. The stem is permanently riveted to the bar and twisted in such manner that it, too, has additional strength.

Heavy Galvanized Steel

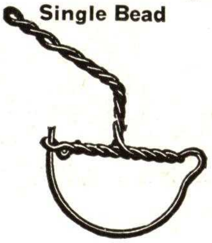
Size	inches	*4	*5	†6	†7
Single Bead	per gross	$6.00	6.50	9.00	9.75
Weight	pounds	32	37	32	35

*Made from 16-gage ½-inch galvanized steel, packed 96 8-inch stems and 48 10-inch stems to the gross; †made from 14-gage ¾-inch galvanized steel, packed 48 9-inch stems and 24 12-inch stems to the half gross.

Pure Copper

Size	inches	4	5	6	7
Single Bead	per gross	$25.50	27.75	46.00	54.00
Weight	pounds	36	40	35	38

Triplex Wire Eaves Trough Hangers



Single Bead

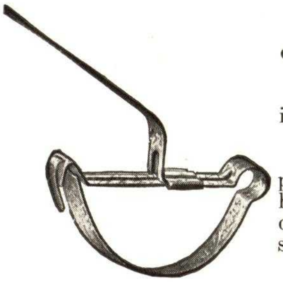
This trough hanger is exceptionally strong. It is made from heavy galvanized wire. Triple twisted.

Packed 1 gross in a box as follows: 96, 8-inch stems; 48, 10-inch stems.

Size......inches	4	5	6	7
Per Gross......	$4.25	4.75	5.50	6.00
Weight per Gross.....pounds	21	25	26	28

Style A Easyon Strap Hangers

Galvanized Steel



An unusually strong and well constructed hanger.

Made of galvanized steel, and is reinforced.

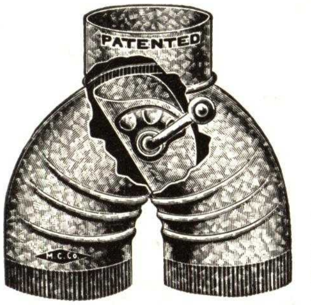
The stem as well as the cross piece is reinforced, and a very heavy clip applied under machine pressure thus holding them securely.

Size......inches	4	5	6
Single Bead......per gross	$6.40	$7.00	$9.40
Double Bead......per gross	7.20	7.80	10.40

Milcor Kutoffs

For Conductor Pipe

Plain Round



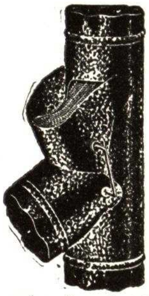
Sheet steel, copper alloy steel, and Armco ingot iron have the same prices.

Also furnished in IX 40 pound long Terne and 16 ounce copper Anaconda. Prices available upon request.

Size In.	Per Dozen	Contents No. of Dozen	Wt., Lb. per Doz. 28 Gage	Wt., Lb. per Doz. 26 Gage
2	$7.50	1	8	7
3	8.00	1	12	13
4	11.00	1	21	24
5	20.00	½	18	20
6	24.00	3/12	22	24

Young's Cut-Offs

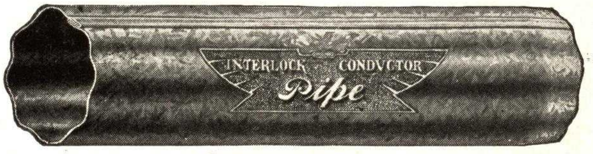
With Strainers



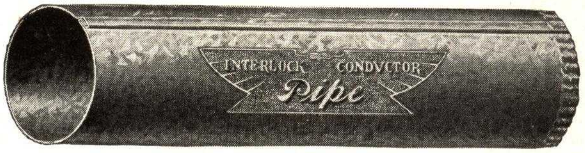
Made in two sizes only, 3 and 4-inch.

Price, 3-Inch Size......	per dozen	.....
Price, 4-Inch Size......	per dozen	.....

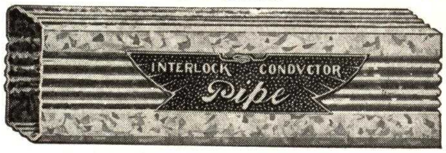
Milcor Interlock Conductor Pipe



Corrugated Round



Plain Round



Corrugated Square

Galvanized Steel

Made in 10-foot lengths. Crated 250 feet to the crate; also shipped nested 500 feet to the crate.

Corrugated and Plain Round

Size......inches	2	3	4	5	6
No. 28 Ga......per linear foot	$.18	$.20	$.28	$.39	$.50
No. 26 Ga......per linear foot	.23	.24	.34	.46	.58
No. 24 Ga......per linear foot	.33	.34	.46	.60	.72

Corrugated Square

Dimensions......inches	1¾x2¼	2⅜x3¼	2¾x4¼	3¾x5
No. 28 Ga. per linear ft.	$.23	$.24	$.31	$.42
No. 26 Ga. per linear ft.	.29	.30	.38	.50
No. 24 Ga. per linear ft.	....	.40	.50	.65

Pure Anaconda Copper

Corrugated and Plain Round

Size......inches	2	3	4	5	6
16 Oz......per linear foot	$.30	.36	.51	.69	.90

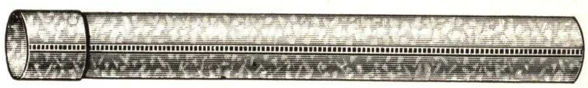
Corrugated Square

Dimensions......inches	1¾x2¼	2⅜x3¼	2¾x4¼	3¾x5
16 Oz....per linear foot	$.31	.40	.53	.75

Milcor Galvanized Steel Tubing and Fittings

Made from Ternes Galvanized after Forming

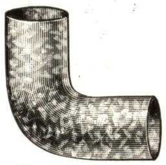
Tubing—Lock Seamed



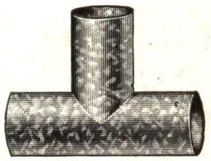
Regularly furnished in 10-foot lengths. Weight, 15 pounds per 100 feet.

Size......inches	1	1⅛	1¼	1½	2
Per Foot......	$.10	.11	.12	.13	.13

Fittings



Round Elbow



Tee Joint

Fittings weigh approximately ½ pound per dozen.

Size......inches	1	1⅛	1¼	1½	2
Round Elbows......each	$.22	$.25	$.25	$.25	$.25
Tee Joints......each	.32	.35	.35	.40	.43

Milcor Plain Round Galvanized Conductor Pipe Elbows

No. 1, 45°

No. 2, 60°

No. 3, 75°

No. 4, 90°

Shoe, 75°

Made of one-piece sheet steel, 28 or 26-gage. There are no soldered joints. Expand without breaking.

When ordering, specify angle by number.

Prices on copper elbows quoted on application.

Size............... inches	2	3	4	5	6
Elbows......... per dozen	$3.60	$4.32	$7.20	$15.00	$18.00
Shoes.......... per dozen	4.80	5.76	9.00	18.00	21.60

Milcor Galvanized Crimp Elbows

Corrugated Round

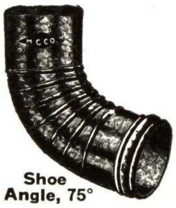
No. 1, Angle 45°

No. 2, Angle 60°

No. 3, Angle 75°

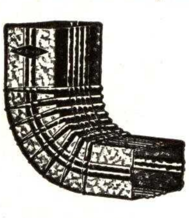
No. 4, Angle 90°

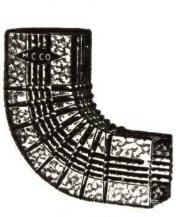
Made of one-piece sheet steel or copper alloy steel galvanized after formed. There are no soldered joints. Expand without breaking. Specify angle by number when ordering.


Shoe Angle, 75°

		Elbows	Shoes
2-Inch Size..................	per dozen	$3.60	$4.80
3-Inch Size..................	per dozen	4.32	5.76
4-Inch Size..................	per dozen	7.20	9.00
5-Inch Size..................	per dozen	15.00	18.00
6-Inch Size..................	per dozen	18.00	21.60

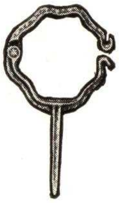
Milcor Square Corrugated Elbows


Style A


Style B

Size Inches	Price, per Dozen Elbows	Shoes
2	$4.80	$6.00
3	6.00	7.20
4	9.00	10.80
5	18.00	21.60

Corrugated and Plain Round Hinged Conductor Hooks



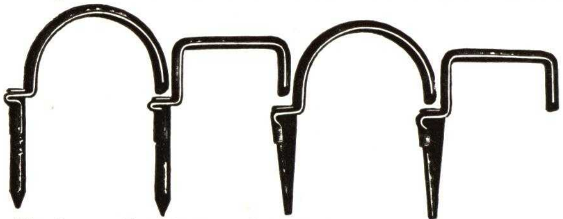
Tinned

Furnished corrugated round for wood, corrugated round for brick, plain round for wood and plain round for brick.

Made in sizes 2, 3, 4, 5 and 6 inches.

	Per 100				
	Size, Inches				
Description	2	3	4	5	6
Corrugated Round for Wood..............	$11.00	$13.00	$20.00	$24.00	$32.00
Corrugated Round for Brick...............	11.00	14.00	20.00	25.00	34.00
Plain for Wood.......	9.00	12.00	16.00	.....	.....
Plain for Brick........	11.00	13.00	16.00	27.00	.....

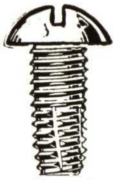
Wrought Iron Direct Drive Conductor Hooks

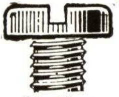

For Wood Round · For Wood Square · For Brick Round · For Brick Square

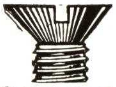
Specify quantity, size, round or square, wood or brick. Two-inch corrugated pipe, round, requires 2½-inch conductor hooks. The 2-inch hook prices cover 2-inch round hooks used with 2-inch plain round conductor pipe.

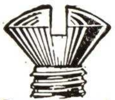
Size......... inches	2	2½	3	4	5	6
For Wood... per 100	$3.00	$4.00	$5.00	$7.00	$10.00	$12.00
For Brick... per 100	3.50	4.50	5.50	8.50	12.00	15.00

Type F Parker-Kalon Hardened Self-Tapping Screws


Round Head


Binding Head


Countersunk Flat Head


Countersunk Oval Head

For making fastenings to ferrous and nonferrous castings, heavy gage sheet metals, structural steel, plastics, resin impregnated plywood, etc. Packed 1 gross or 1000 in a box.

Mach. Screw Size No.	Screw Lgth. In.	†Styles Heads Available	Plain Steel Fin. per Gross	*Plated Fin. per Gross	Mach. Screw Size No.	Screw Lgth. In.	†Styles Heads Available	Plain Steel Fin. per Gross	*Plated Fin. per Gross
2–56	⅛	RB—	$.28	$.29	10–24	5/16	RB—	$.41	$.45
2–56	3/16	RBFO	.28	.29	10–24	⅜	RB—	.41	.45
2–56	¼	RBFO	.28	.29	10–24	½	RBFO	.43	.48
2–56	5/16	RB—	.29	.30	10–24	⅝	RBFO	.45	.51
2–56	⅜	RB—	.29	.30	10–24	¾	RBFO	.47	.54
4–40	3/16	RB—	.29	.30	10–24	⅞	RBFO	.50	.57
4–40	¼	RBF–	.29	.30	10–24	1	RBFO	.52	.60
4–40	5/16	RBFO	.30	.31	10–24	1¼	RBFO	.56	.68
4–40	⅜	RBFO	.30	.31	10–24	1½	RBFO	.61	.74
4–40	½	RBFO	.31	.33	10–32	5/16	RB—	.41	.45
6–32	3/16	RB—	.30	.32	10–32	⅜	RB—	.41	.45
6–32	¼	RBF–	.30	.32	10–32	½	RBFO	.43	.48
6–32	5/16	RBFO	.31	.33	10–32	⅝	RBFO	.45	.51
6–32	⅜	RBFO	.31	.33	10–32	¾	RBFO	.47	.54
6–32	½	RBFO	.32	.35	10–32	⅞	RBFO	.50	.57
6–32	⅝	RBFO	.33	.36	10–32	1	RBFO	.52	.60
6–32	¾	RBFO	.35	.38	10–32	1¼	RBFO	.56	.68
6–32	⅞	RBFO	.36	.40	10–32	1½	RBFO	.61	.74
6–32	1	RBFO	.37	.41	¼"–20	⅜	RB—	.53	.62
8–32	¼	RB—	.35	.38	¼"–20	½	RB–O	.58	.67
8–32	5/16	RB—	.35	.38	¼"–20	⅝	RBFO	.62	.73
8–32	⅜	RBFO	.35	.38	¼"–20	¾	RBFO	.67	.79
8–32	½	RBFO	.37	.41	¼"–20	⅞	RBFO	.72	.85
8–32	⅝	RBFO	.39	.43	¼"–20	1	RBFO	.76	.91
8–32	¾	RBFO	.42	.46	¼"–20	1¼	RBFO	.85	1.06
8–32	⅞	RBFO	.44	.49	¼"–20	1½	RBFO	.94	1.17
8–32	1	RBFO	.46	.53	......	...	......	...	....

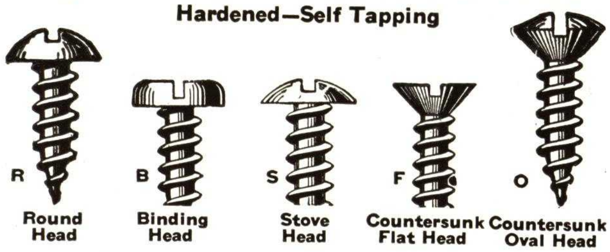
*Brass, zinc, copper, cadmium, or Parkerized.

R—round head; B—binding head; F—countersunk flat head; O—countersunk oval head.

†Decimal equivalents: No. 2–56 diameter, .085 inch; No. 4–40, .111 inch; No. 6–32, .137 inch; No. 8–32, .163 inch; No. 10–24, .189 inch; No. 10–32, .189 inch; and ¼"–20, .249 inch.

Type A Parker-Kalon Sheet Metal Screws

Hardened—Self Tapping



For making fastenings to light gauge sheet metals, resin-impregnated plywood, asbestos compositions, etc.

Length of screw is from under edge of head to end of screw. On countersunk screws from top of countersink to end of screw.

Packed 1 gross or 1000 of a size in a box.

Screw No.	Screw Lgth. In.	*Styles Heads Available	Plain Steel Fin. per Gross	† Plated Fin. per Gross
4	¼	RBSFO	$.25	$.26
4	⅜	RBSFO	.26	.27
4	½	RBSFO	.27	.29
4	⅝	RBFO	.28	.30
4	¾	RBFO	.29	.31
6	¼	RBSFO	.26	.28
6	⅜	RBSFO	.27	.29
6	½	RBSFO	.28	.30
6	⅝	RBFO	.29	.32
6	¾	RBFO	.30	.33
6	⅞	RBFO	.31	.35
6	1	RBFO	.32	.36
7	⅜	RBSFO	.28	.31
7	½	RBSFO	.29	.32
7	⅝	RBFO	.30	34
7	¾	RBFO	.31	.35
7	⅞	RBFO	.32	.37
7	1	RBFO	.33	.38
8	⅜	RBSFO	.30	.33
8	½	RBSFO	.32	.36
8	⅝	RBSFO	.34	.38
8	¾	RBSFO	.36	.41
8	⅞	RBFO	.38	.43
8	1	RBFO	.40	.46
8	1¼	RBFO	.44	.51
8	1½	RBFO	.48	.56
10	⅜	RBSFO	$.35	$.40
10	½	RBSFO	.37	.42
10	⅝	RBSFO	.39	.45
10	¾	RBSFO	.41	.48
10	⅞	RBFO	.43	.50
10	1	RBFO	.45	.53
10	1¼	RBFO	.49	.59
10	1½	RBFO	.53	.64
10	1¾	RBFO	.57	.69
10	2	RBFO	.61	.75
12	½	RB	.42	.49
12	⅝	RB	.45	.53
12	¾	RBF	.48	.57
12	⅞	RB	.51	.61
12	1	RBF	.54	.65
12	1¼	RBF	.60	.73
12	1½	RB	.66	.81
14	½	RB	.50	.60
14	⅝	RB	.54	.65
14	¾	RBFO	.58	.71
14	⅞	RBFO	.62	.76
14	1	RBFO	.66	.81
14	1¼	RBFO	.74	.92
14	1½	RBF	.82	1.02
14	1¾	RBF	.90	1.12
14	2	RBF	.98	1.23

*R—round head; B—binding head; S—stove head; F—countersunk flat head; O—countersunk oval head.

†Brass, copper, cadmium, or zinc. Parkerized.

Decimal equivalents: No. 4 diameter, .112; No. 6, .138; No. 7, .155; No. 8, .165; No. 10, .191; No. 12, .218; No. 14, .251.

Special sizes and finishes, prices on request.

Type A Parker-Kalon Sheet Metal Screws

Round Head—18-8 Stainless Steel—Self-Tapping

For making fastenings to light gage sheet metals, non-ferrous castings, plastics, resin impregnated plywood, asbestos compositions, etc.

Packed 1 gross or 1000 of a size in a box.

No.	6	7	8	10
Per Gross	$.46	.55	.69	1.06
Screw Diameter inches	.138	.155	.165	.191
Screw Length inches	⅜	½	⅝	¾

Parker-Kalon Phillips Recessed Head Screws

Sheet Metal—Self-Tapping

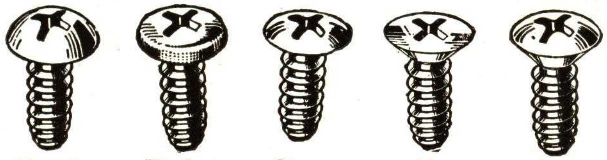
Type A Round Head

Type A, for joining light gages of sheet metal and making fastenings to sheet metal up to 18 gage (.050-inch).

Type Z, for joining light and heavy gages of sheet metal and making fastenings to sheet metal up to 6 gage (.203-inch).

Packed 1 gross in a box.

Type Z Round Head



Type A
Per Gross

No. 4 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
¼	$.45	$.46	R B S F O
⅜	.46	.47	R B S F O
½	.47	.48	R B S F O
⅝	.49	.51	R B – F O
¾	.51	.53	R B – F O

No. 6 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
¼	$.44	$.46	R B S F O
⅜	.46	.48	R B S F O
½	.48	.50	R B S F O
⅝	.50	.52	R B – F O
¾	.52	.55	R B – F O
⅞	.55	.58	R B – F O
1	.58	.61	R B – F O

No. 7 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
⅜	$.48	$.50	R B S F O
½	.50	.53	R B S F O
⅝	.52	.55	R B – F O
¾	.54	.57	R B – F O
⅞	.57	.61	R B – F O
1	.60	.64	R B – F O

No. 8 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
⅜	$.50	$.53	R B S F O
½	.52	.55	R B S F O
⅝	.54	.58	R B S F O
¾	.56	.60	R B S F O
⅞	.59	.63	R B – F O
1	.62	.67	R B – F O
1¼	.69	.74	R B – F O
1½	.78	.84	R B – F O

No. 10 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
⅜	$.53	$.57	R B S F O
½	.56	.60	R B S F O
⅝	.59	.64	R B S F O
¾	.62	.67	R B S F O
⅞	.65	.71	R B – F O
1	.69	.76	R B – F O
1¼	.79	.87	R B – F O
1½	.89	.98	R B – F O
1¾	1.00	1.10	R B – F O
2	1.11	1.22	R B – F O

No. 12 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
½	$.68	$.74	R B – – –
⅝	.72	.78	R B – – –
¾	.76	.83	R B – F –
⅞	.80	.88	R B – – –
1	.84	.93	R B – F –
1¼	.95	1.05	R B – F –
1½	1.07	1.19	R B – – –

No. 14 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
½	$.82	$.90	R B – – –
⅝	.86	.95	R B – – –
¾	.90	1.00	R B – F O
⅞	.95	1.06	R B – F O
1	1.00	1.12	R B – F O
1¼	1.12	1.26	R B – F O
1½	1.25	1.41	R B – F –
1¾	1.39	1.57	R B – F –
2	1.54	1.74	R B – F –

Type Z
Per Gross

No. 4 Gage Diam.

Length Inches	Plain Finish	*Plated Fnish	†Head Styles
¼	$.45	$.46	R B S F O
5/16	.46	.47	R B S – –
⅜	.46	.47	R B S F O
½	.47	.48	R B – F O

No. 6 Gage Diam.

Length Inches	Plain Finish	*Plated Fnish	†Head Styles
¼	$.44	$.46	R B S F O
5/16	.46	.48	R B S F O
⅜	.46	.48	R B S F O
½	.48	.50	R B – F O
⅝	.50	.52	R B – F O
¾	.52	.55	R B – F O

No. 7 Gage Diam.

Length Inches	Plain Finish	*Plated Fnish	†Head Styles
⅜	$.48	$.50	R B – – –
½	.50	.53	R B – – –

No. 8 Gage Diam.

Length Inches	Plain Finish	*Plated Fnish	†Head Styles
⅜	$.50	$.53	R B S F O
½	.52	.55	R B S F O
⅝	.54	.58	R B S F O
¾	.56	.60	R B – F O
⅞	.59	.63	R B – F O
1	.62	.67	R B – F O
1¼	.69	.74	R – – F O

No. 10 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
⅜	$.53	$.57	R B S – –
½	.56	.60	R B S F O
⅝	.59	.64	R B S F O
¾	.62	.67	R B – F O
⅞	.65	.71	R B – F O
1	.69	.76	R B – F O
1¼	.79	.87	R – – F O
1½	.89	.98	R – – F O
2	1.11	1.22	R – – F O

No. 12 Gage Diam.

Length Inches	Plain Finish	*Plated Finish	†Head Styles
⅜	$.58	$.70	R B – – –
½	.68	.74	R B – – –

No. 14 Gage Diam.

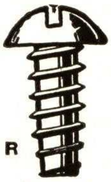
Length Inches	Plain Finish	*Plated Finish	†Head Styles
⅜	$.78	$.85	R B S – –
½	.82	.90	R B S – –
⅝	.86	.95	R B S – –
¾	.90	1.00	R B – F –
⅞	.95	1.06	R B – F –
1	1.00	1.12	R B – F –
1¼	1.12	1.26	R – – F –
1½	1.25	1.41	R – – F –
2	1.54	1.74	R – – F –

*Plate finish, prices cover brass, copper, cadmium, parkerized.

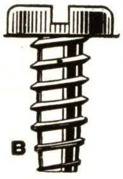
†Available head styles: R—round head, B—binding head, S—stove head, F—flat head, O—oval head.

Type Z Parker-Kalon Sheet Metal Screws

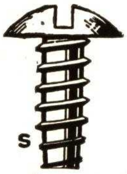
Hardened—Self-Tapping



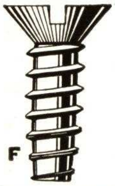
Round Head



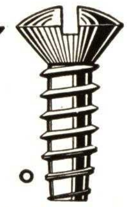
Binding Head



Stove Head



Countersunk Flat Head



Countersunk Oval Head

For making fastenings to light and heavy gage sheet metals, non-ferrous castings, plastics, resin-impregnated plywood, asbestos compositions, etc.

Length of screw is from under edge of head to end of screw. On countersunk screws from top of countersink to end of screw.

Packed 1 gross or 1000 of a size in a box.

Screw No.	Screw Lgth. In.	*Styles Heads Available	Plain Steel Fin. per Gross	† Plated Fin. per Gross
2	⅛	RB	$.24	$.25
2	3/16	RBFO	.24	.25
2	¼	RBFO	.24	.25
2	5/16	RB	.25	.26
2	⅜	RB	.25	.26
4	3/16	RBS	.25	.26
4	¼	RBSFO	.25	.26
4	5/16	RBS	.26	.27
4	⅜	RBSFO	.26	.27
4	½	RBFO	.27	.29
6	3/16	RBS	.26	.28
6	¼	RBSFO	.26	.28
6	5/16	RBSFO	.27	.29
6	⅜	RBSFO	.27	.29
6	½	RBFO	.28	.30
6	⅝	RBFO	.29	.32
6	¾	RBFO	.30	.33
7	¼	RB	.27	.30
7	5/16	RB	.28	.31
7	⅜	RB	.28	.31
7	½	RB	.29	.32
8	¼	RBS	.30	.33
8	5/16	RBS	.30	.33
8	⅜	RBSFO	.30	.33
8	½	RBSFO	.32	.36
8	⅝	RBSFO	.34	.38
8	¾	RBFO	$.36	$.41
8	⅞	RBFO	.38	.43
8	1	RBFO	.40	.46
8	1¼	RFO	.44	.51
10	¼	RBS	.35	.40
10	5/16	RBS	.35	.40
10	⅜	RBS	.35	.40
10	½	RBSFO	.37	.42
10	⅝	RBSFO	.39	.45
10	¾	RBFO	.41	.48
10	⅞	RBFO	.43	.50
10	1	RBFO	.45	.53
10	1¼	RFO	.49	.59
10	1½	RFO	.53	.64
10	2	RFO	.61	.75
12	⅜	RB	.39	.45
12	½	RB	.42	.49
14	⅜	RBS	.46	.55
14	½	RBS	.50	.60
14	⅝	RBS	.54	.65
14	¾	RBF	.58	.71
14	⅞	RBF	.62	.76
14	1	RBF	.66	.81
14	1¼	RF	.74	.92
14	1½	RF	.82	1.02
14	2	RF	.98	1.23

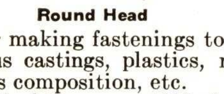
*R—round head; B—binding head; S—stove head; F—countersunk flat head; O—countersunk oval head.

†Brass, copper, cadmium, and zinc. Parkerized.

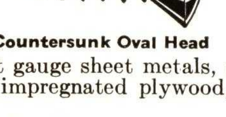
Decimal equivalents: No. 2 diameter, .086; No. 4, .112; No. 6, .137; No. 7, .151; No. 8, .163; No. 10, .186; No. 12, .212; No. 14, .243. Special sizes and finishes, prices on request.

Type Z Parker-Kalon Sheet Metal Screws

18-8 Stainless Steel—Self-Tapping



Round Head



Countersunk Oval Head

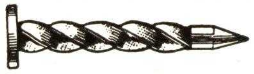
For making fastenings to light gauge sheet metals, non-ferrous castings, plastics, resin impregnated plywood, asbestos composition, etc.

Packed 1 gross or 1000 of a size in a box.

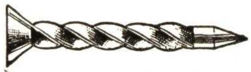
	With Round Head Only	With Round and Countersunk Oval Heads						
No.	6	4	6	8	8	10	10	14
Length......in.	¼	¼	⅜	⅜	½	½	⅝	⅝
Diameter....in.	137	112	137	163	163	186	186	243
Per Gross.......	$.42	.35	.46	.59	.64	.92	.99	1.70

Parker-Kalon Hardened Screwnails

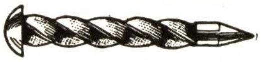
For Fastening Sheet Metal Securely to Wood



Plain Flat Head



Countersunk Flat Head



Round Head

Combines the qualities of a nail and a screw—drives like a nail—holds like a screw. Will not bend, back out, or loosen.

Made in sizes listed below.

Packed 1000 of a size in a box. Large quantities in bulk, if desired.

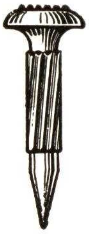
Furnished in plain steel and cadmium-plated finishes.

Also furnished in Parkerized, brass-plated or copper-plated finishes at same prices as cadmium-plated.

Lgth. In.	Plain Steel per 1000	Cadmium Plated per 1000	Diameter Gage No.	Diameter Decimal Equiv. of Ga. No.	Approx. No. in Pound	Approx. Quantity in Keg	Weight Pounds per 1000
Plain Flat Heads							
¾	$.90	$1.00	15	.072	1100	110000	1
¾	1.00	1.10	13	.091	675	65000	1½
⅞	1.10	1.20	13	.091	585	60000	1¾
1	1.35	1.50	12	.105	393	40000	2½
1¼	2.00	2.20	11	.120	245	25000	4
1½	2.50	2.75	11	.120	205	20000	5
1¾	3.15	3.50	10	.135	144	15000	7
2	3.60	4.00	10	.135	125	12500	8
Countersunk Flat Heads							
¾	$.90	$1.00	15	.072	1100	110000	1
¾	1.00	1.10	14	.080	875	85000	1¼
1	1.20	1.35	14	.080	690	70000	1½
1¼	1.40	1.55	14	.080	535	55000	2
1½	1.60	1.80	14	.080	444	45000	2¼
Round Heads							
¾	$.90	$1.00	15	.072	1100	110000	1
½	.90	1.00	14	.080	1200	120000	1
¾	1.00	1.10	14	.080	863	85000	1¼
1	1.20	1.35	14	.080	667	65000	1½
Large Round Heads							
1	$1.75	$1.95	13	.091	430	45000	2⅓

Parker-Kalon Hardened Masonry Nails

Cadmium Plated



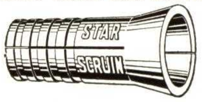
For making fastenings to brick, mortar, concrete, etc.

Commonly used for hanging ventilating pipes and ducts; fastening leader and gutter pipe; attaching roof flashings; erecting cornices and skylights.

Packed in boxes of 100; also bulk, in kegs.

Size.........inches	5/32x1	3/16x1¼	¼x1½	¼x2	¼x2½
Per 100............	$.51	.65	.95	1.20	1.44
Approx. No. in Lb..	125	75	38	31	25
Quantity in Keg...	12500	7500	4000	3000	2500
Wt. per 100......lb.	⅔	1⅓	2½	3¼	4

Star Scruin Lead Anchors



For use with wood screws. Requires a smaller installation hole than the corresponding size screw. It takes several sizes of screws. The holding power in masonry is higher in the short length for No. 8 and 14 sizes; in plaster walls or other soft-surfaced masonry, the long length is recommended. When ordering, specify screw size and length of anchor, or No.

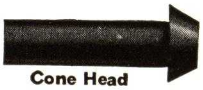
No.	Without Screws per 100	Screw Size and Length of Anchor Inches	Fractional Screw Size, In.	O.D. and Drill Required Inches	Std. Pkg.	Shipping Carton	Ship. Wt. Lb. per 100
408	$5.00	6– 8 x ¾	⅛–3/16	¼	100	1000	1
409	5.60	6– 8 x1½	⅛–3/16	¼	100	500	2¼
412	5.60	10–12–14x1	3/16–¼	5/16	100	500	2½
413	8.00	10–12–14x1½	3/16–¼	5/16	100	500	3½
417	6.25	16–18x1	5/16	⅜	100	500	3
418	9.00	16–18x1½	5/16	⅜	25	250	5
422	10.00	20–22–24x1¾	⅜	7/16	25	250	6½

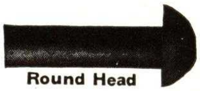
Small Rivets

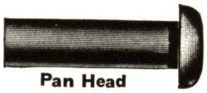
Solid Low Carbon Basic Steel

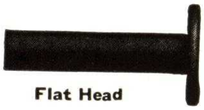
Per Pound—In 200-Pound Kegs
Effective February 26, 1940

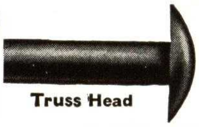
Standard Heads

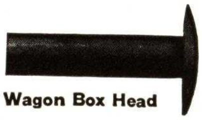

Cone Head


Round Head


Pan Head

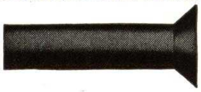

Flat Head


Truss Head


Wagon Box Head

Length Inches	Diameter, Inches							
	7/16 (.4375)	3/8 (.375)	5/16 (.3125)	1/4 (.250)	3/16 (.1875)	5/32 (.156)	1/8 (.125)	3/32 (.0935)
1/8	...	...	...	...	...	...	$.55	$.90
3/16	...	...	...	...	$.25	$.26	.47	.73
1/4	...	...	...	$.20	.23	.24	.42	.62
5/16	...	...	$.20	.20	.22	.23	.39	.54
3/8	...	$.18	.18	.19	.21	.22	.35	.47
7/16	$.17	.17	.18	.19	.20	.21	.33	.42
1/2–5/8	.16	.16	.16½	.17	.18	.19	.31	.41
3/4–7/8	.15½	.15½	.16	.16½	.17½	.18½	.28½	.33
1–2	.15	.15	.15½	.16	.17	.18	.23	.27
2 1/8–3½	.17	.17	.17½	.18	.20	...	...	...
3 5/8–6	.17	.17	.18½	.19	.22	...	...	...

Countersunk Heads



Length Inches	7/16 (.4375)	3/8 (.375)	5/16 (.3125)	1/4 (.250)	3/16 (.1875)	5/32 (.156)	1/8 (.125)	3/32 (.0935)
1/8	...	...	...	...	...	...	$.78	$1.06
3/16	...	...	...	...	$.31	$.34	.60	.83
1/4	...	...	...	$.24	.27½	.28½	.52	.80
5/16	...	...	$.24	.23	.25½	.27	.47	.59
3/8	...	$.22	.22	.22½	.24½	.25½	.41	.51
7/16	$.20	.21	.21½	.22	.23	.24	.38	.45
1/2–5/8	.18½	.18½	.20½	.19	.20	.21	.35	.44
3/4–7/8	.18	.18	.20	.18	.19	.20	.31½	.35
1–2	.16½	.17	.19½	.17	.18	.19	.26	.29
2 1/8–3½	.18½	.19	.21½	.19	.21	...	...	...
3 5/8–6	.18½	.19	.21½	.19½	.23	...	...	...

Intermediate lengths and diameters take list prices of nearest smaller size. When the mean body diameter falls within the standard tolerance for a given diameter, the list price for that diameter shall apply.

Extras Non-Standard and Special Sizes

Cupped End, Add....	$.02	Taper Shank, Add...	$.02
Pointed End, Add....	.02	Collared, Add.......	.03
Swell Neck, Add.....	.02	Shouldered, Add.....	.10
Lugs, Ribs Under Head, Add......................	.02		

Shoulder Rivets.—To determine list use list price for small diameter of shank and total length under head.

Collared Rivets.—To determine list after determining diameter use longer length measured under collar.

Copper Content.—Up to 20 per cent minimum, no maximum specified, add 25 cents per 100 pounds.

For bright polishing after annealing, wet tumbling or scaling, add 50 cents per 100 pounds.

For Sizes Other Than Standard the Following Net Quantity Extras Apply to Each Item per Order

600 Lb. or More...No Extra		50 to 99 Lb ....per lb.	$.06
300 to 599 Lb..per lb.	$.00½	25 to 49 Lb.....per lb.	.16
200 to 299 Lb..per lb.	.01	15 to 24 Lb.....per lb.	.30
100 to 199 Lb..per lb.	.02		

Minimum quantity specially manufactured, 15 pounds of an item. When oval heads are ordered round heads will be furnished unless otherwise specified.

Annealed rivets are furnished unless otherwise specified.

All regular tinners, coopers, belt or culvert rivets covered by list prices are considered standard.

Sizes larger or smaller than shown, prices on application.

Coating of plating items of 49 pounds or less, lot charge equal to one-half the 100-pound charge, but does not apply to hot tinned or tin-plated tinners' rivets.

Extras for Packing in Small Kegs or Boxes

100-Pound Kegs, Add..	$.01	5 or 10-Pound Packages, Add...........	$.05
50-Pound Boxes, Add.	.03	1-Pound Packages, Add	.08
25-Pound Boxes, Add.	.04		

Tinners' Flat Head Copper Rivets

Size Lbs. per 1000	Diam. Shank In.	Lgth. Under Head In.	No. Pcs. per Lb.	Size Lbs. per 1000	Diam. Shank In.	Lgth. Under Head In.	No. Pcs. per Lb.
½	.092	5/32	1855	2½	.148	9/32	375
¾	.101	3/16	1223	3	.160	5/16	308
1	.115	13/64	873	3½	.163	21/64	288
1¼	.120	7/32	738	4	.173	11/32	232
1½	.125	15/64	642	5	.186	3/8	182
2	.140	17/64	451	6	.200	25/64	150

100 Pounds and Over.........per pound Base

For sizes other than base add the following net extras:

18-16-14-12 Pounds..........................	Base
10-9-8-7-6 Pounds............................	$.01
5-4-3½-3-2½-2 Pounds........................	.03
1¾-1½-1¼-1 Pounds...........................	.06
14-12-10-8 Ounces............................	.12

Tinners' and Coopers' Black Rivets

Size Weight Per 100		Per 1000 in Paper Pkg.	Bulk 200-Lb. Kegs Per Lb. Flat Head Not Pointed	Bulk 200-Lb. Kegs Per Lb. Flat Ctrsk. Head Pointed	Rivet Gage B.W.G.	Nominal Diameter Decimal Equiv. Inches	Length Under Head Inches
6	Oz.	$.28	$.62	$.66	14	.083	1/8
8	Oz.	.32	.52	.56	13½	.089	5/32
10	Oz.	.36	.49	.53	13	.095	11/64
12	Oz.	.41	.46	.50	12¼	.105	3/16
14	Oz.	.45	.43	.47	12	.109	3/16
1	Lb.	.48	.40	.44	11¾	.112	13/64
1¼	Lb.	.54	.35	.39	11	.120	7/32
1½	Lb.	.62	.33	.37	10¼	.130	15/64
1¾	Lb.	.67	.30	.34	10	.134	1/4
2	Lb.	.72	.28	.32	9¼	.144	17/64
2½	Lb.	.83	.25	.29	9	.148	9/32
3	Lb.	.96	.24	.28	8¼	.161	5/16
3½	Lb.	1.09	.23	.27	8	.165	21/64
4	Lb.	1.20	.22	.26	7¼	.176	11/32
5	Lb.	1.30	.21	.25	6¾	.186	3/8
6	Lb.	1.50	.20	.24	6	.203	25/64
7	Lb.	1.75	.20	.24	5	.220	13/32
8	Lb.	2.00	.20	.24	4¾	.225	7/16
9	Lb.	2.20	.19	.23	4	.238	29/64
10	Lb.	2.40	.19	.23	4	.238	15/32
12	Lb.	2.64	.17	.21	3	.259	1/2
14	Lb.	3.08	.17	.21	2	.284	33/64
16	Lb.	3.52	.17	.21	1	.300	17/32
18	Lb.	3.78	.16	.20	11/32	.343	19/32

For 100-pound kegs, add 1 cent to list; 50-pound boxes, add 3 cents; 25-pound boxes, add 4 cents; 5 or 10-pound packages, add 5 cents; 1-pound packages, add 8 cents.

When tinned rivets are ordered, hot tinned are furnished.

When tin-plated rivets are ordered cold tinned are furnished. Prices on request.

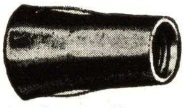
Tinned Tinners' Rivets

Dimensions of Tinners' Rivets

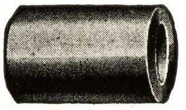
Size Weight Per 1000 Oz.	Lgth. In.	Diam. In.	Size Weight Per 1000 Lbs.	Lgth. In.	Diam. In.	Size Weight Per 1000 Lbs.	Lgth. In.	Diam. In.
6	9/64	.083	2	17/64	.144	9	29/64	.238
8	5/32	.089	2½	9/32	.148	10	15/32	.238
10	11/64	.095	3	5/16	.161	12	1/2	.259
12	3/16	.105	3½	21/64	.165	14	33/64	.284
14	3/16	.109	4	11/32	.176	16	17/32	.300
16	13/64	.112	5	3/8	.186	18	19/32	.340
1¼	7/32	.120	6	25/64	.203	20	11/16	.375
1½	15/64	.130	7	13/32	.220	..	...	....
1¾	1/4	.134	8	7/16	.225	..	...	....

Market prices quoted upon application.

Ackerman-Johnson Expansive Screw Anchors



Anchor Nut



Expansive Sleeve

Anchor Assembled

For attaching fixtures or wiring to any hard surface as brick, concrete, stone or marble, slate, etc.

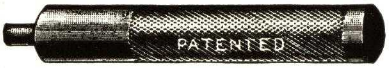
Sleeve expands over tapered formations of nut against all sides of hole. Installed completely before work is attached. Holding power exceeds the tensile strength of screws or bolts to be used with them.

Threaded for machine screws or bolts.

Furnished without screws.

Size No. and Threads per Inch	Per 100	Min. Dimen. of Holes Required, In. Diam.	Depth	Std. Qty.	Shipping Weight Pounds per 100
6 x32	$3.80	¼	⅜	50–100	⅞
8 x32	4.50	5/16	½	50–100	1¼
10 x24	4.95	⅜	⅝	50–100	2½
12 x24	6.50	7/16	¾	50–100	3¾
¼x20	7.20	½	⅞	50–100	5¼
5/16x18	9.75	⅝	1	50–100	9
⅜x16	12.00	¾	1¼	50–100	14½
7/16x14	15.00	⅞	1½	50–100	21½
½x13	15.00	⅞	1½	50–100	21½
⅝x11	25.00	1⅛	2	50–100	46
¾x10	50.00	1¼	2¼	50–100	64
⅞x 9	80.00	1½	2¾	25–50	110
1 x 8	120.00	1¾	3½	25–50	188

Ackerman-Johnson Piloted Setting Punches

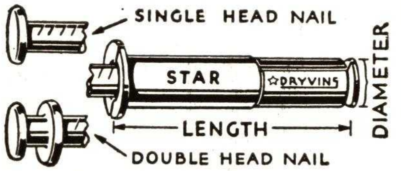


Included without additional charge in each box of anchors.

No. 3900 Star Dryvin Hammer-Drive Anchors

Rustproofed

Dryvins furnished regularly with single-head nails. Dryvins with double-head nails can be furnished in practically all sizes at no extra charge.



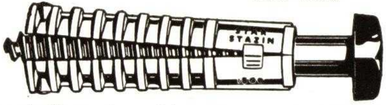
Dryvins are designated by the diameter and length of the shield. This is marked on each size. The diameter is the actual diameter of the shield. This also is the nominal diameter of both the mounting hole and proper size drill required. The length of the Dryvin is measured from the top flange to the bottom flange of the shield. This is not the nail length.

Listed by Underwriters' Laboratories.

No.	Complete with Nails Per 100	Size Diam. Lgth. of Shield Inches	O.D. and Drill Required Inch	Work. Load Lb.	No. in Std. Pkg.	No. in Std. Ship. Ctn.	Ship. Wt., Lb. per 100
3910	$8.00	3/16x ⅞	3/16	60	100	500	1
3911	9.00	3/16x1¼	3/16	100	100	500	1½
3915	10.00	¼x1	¼	200	100	500	2
3916	11.00	¼x1¼	¼	250	100	500	2¾
3917	12.00	¼x1½	¼	300	50	250	3
3920	14.00	5/16x1¼	5/16	250	50	250	4
3921	16.00	5/16x1¾	5/16	300	25	250	5
3923	18.00	5/16x2¼	5/16	300	25	250	6½
3924	20.00	5/16x2¾	5/16	300	25	250	7½
3926	18.00	⅜x1½	⅜	400	100	500	7
3927	20.00	⅜x2	⅜	450	25	250	8¼
3929	25.00	⅜x3¼	⅜	500	50	250	12
3935	25.00	½x1	½	200	100	500	9
3937	30.00	½x2¼	½	500	50	250	16
3938	32.00	½x2¾	½	550	50	250	19
3939	35.00	½x3½	½	600	50	250	23

Star Stazin Lag Screw Expansion Shields

No. 1800



Made of a special alloy, rust-proof throughout.

Threads bear completely on root diameter of lag screw. External corrugations or ribs. End sections are reinforced.

Long

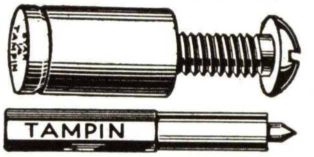
No.	Per 100 Less Bolts	Diam. Lag Screw Inches	Length Inches	O.D., In. and Drill Req.	No. in Std. Pkg.	Ship. Wt. Lb. per 100
1815	$15.00	¼	1½	½	50	5
1820	18.00	5/16	1¾	½	50	5
1825	25.00	⅜	2½	⅝	50	9½
1835	38.00	½	3	¾	25	14
1845	45.00	⅝	3½	⅞	25	22
1855	65.00	¾	3½	1	10	29

Short

No.	Per 100 Less Bolts	Diam. Lag Screw Inches	Length Inches	O.D., In. and Drill Req.	No. in Std. Pkg.	Ship. Wt. Lb. per 100
1818	$15.00	¼	1	½	50	3
1823	18.00	5/16	1¼	½	50	3
1828	25.00	⅜	1¾	⅝	50	7
1838	38.00	½	2	¾	25	10½
1848	45.00	⅝	2	⅞	25	12½
1858	65.00	¾	2	1	10	16

Long shield will be furnished unless otherwise specified.

No. 4000 Star Tampin Expansion Shields



For use with machine screws or bolts. One Tampin tool furnished with each box of nuts.

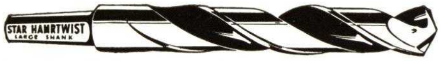
The closed bottom prevents dust from entering threads of the Tampin nut.

All sizes have 2 fins on the conical nut which prevents nut from turning in the lead. Special alloy lead sleeve.

No.	Per 100	*Size	Safe Work Load, Lb.	Minimum Holes Required, Inches Diam.	†Depth	Std. Pkg.	Shipping Carton	Weight Pounds per 100
‡4006	$3.80	6–32	100	5/16	½	100	1000	1
‡4008	4.50	8–32	100	5/16	½	100	1000	1
‡4010	4.95	10–24	150	⅜	⅝	100	1000	2
‡4012	6.50	12–24	200	½	⅞	100	1000	4½
‡4015	7.20	¼–20	200	½	⅞	100	1000	4½
‡4020	9.75	5/16–18	300	⅝	1	50	250	7½
‡4025	12.00	⅜–16	450	¾	1¼	50	250	15
‡4035	15.00	½–13	600	⅞	1½	50	250	20½
‡4045	25.00	⅝–11	800	1⅛	1¾	50	100	41
4055	50.00	¾–10	1000	1¼	2¼	50	50	54

*Size of bolt or screw with which shield is used.
†Use deeper hole for soft masonry. ‡With closed bottom nut.

No. 4200 Star Hamrtwist Masonry Drill Points



The Hamrtwist Masonry Drill Point is a fast and easy cutting tool giving a round and uniform hole in concrete, brick, or stone. Drill does not lose its diameter as other types of masonry drills inasmuch as there is no taper at the point. It can be resharpened on any grinding wheel. This point has a much longer life than it is possible to get from a four point drill.

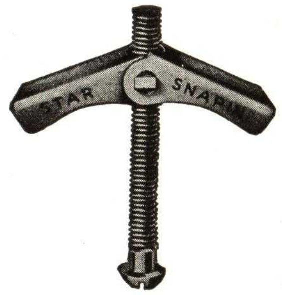
Length given is overall including the taper. Deduct approximately one inch for actual drilling depth.

Special long lengths furnished when specified only.

Standard package 12 of a size.

No.	Per Doz.	Diam. In.	Lgth. In.	Shipping Wt., Lb. per Doz.	No.	Per Doz.	Diam. In.	Lgth. In.	Shipping Wt., Lb. per Doz.
4210	$10.80	3/16	2⅝	½	4225	$14.80	⅜	5 1/16	1½
4212	10.80	7/32	3⅛	½	4230	18.80	7/16	5¼	1¾
4215	10.80	¼	3¼	¾	4235	22.80	½	5 9/16	2¼
4217	11.80	9/32	3⅝	¾	4240	26.80	9/16	4⅜	2
4220	12.80	5/16	4¼	1	4245	28.80	⅝	5½	2½
4222	13.80	11/32	4⅜	1	....	.....	..	...	...

No. 3000 Star Snapin Toggle Bolts



All steel.

Threads are National Standard, not stove bolt threads.

F—with flat head screw.

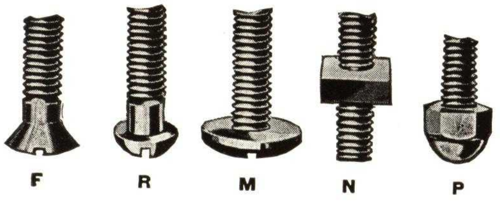
R—with round head screw.

M—with mushroom head, furnished ⅛-inch diameter only.

N—reverse R or F screw and add nut.

P—reverse R or F screw and add capnut.

***Capnuts are extra.**



With M or F Head Screws

No.	Per 100	Diameter and Length of Screw Inches	Wire Gage Threads per Inch	Drill Size Required Inches	No. of Pieces in Box	No. in Ship. Carton	Ship. Wt. Lb. per 100
3006	**$6.60**	⅛x2	6—32	⅜	50	500	1½
3007	**6.80**	⅛x3	6—32	⅜	50	500	2
3008	**7.00**	⅛x4	6—32	⅜	50	500	2

With R, F, N, or P* Screws

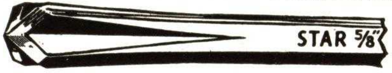
3009	**$6.90**	3/16x2	10—24	½	50	250	2½
3010	**7.00**	3/16x3	10—24	½	50	250	3½
3011	**7.30**	3/16x4	10—24	½	50	250	4½
3012	**8.40**	3/16x5	10—24	½	50	250	5
3013	**8.90**	3/16x6	10—24	½	50	250	5½
3015	**7.70**	¼x3	¼—20	⅝	50	250	6½
3016	**8.00**	¼x4	¼—20	⅝	50	250	8
3017	**9.40**	¼x5	¼—20	⅝	50	250	8½
3018	**9.80**	¼x6	¼—20	⅝	50	250	10
3020	**12.00**	5/16x3	5/16—18	⅞	25	125	13
3021	**13.00**	5/16x4	5/16—18	⅞	25	125	15
3022	**14.00**	5/16x5	5/16—18	⅞	25	125	15½
3023	**15.00**	5/16x6	5/16—18	⅞	25	125	18
3025	**14.00**	⅜x3	⅜—16	⅞	25	125	16
3026	**16.00**	⅜x4	⅜—16	⅞	25	125	18½
3027	**18.00**	⅜x5	⅜—16	⅞	25	125	20½
3028	**20.00**	⅜x6	⅜—16	⅞	25	125	23

Toggle Heads Only

3006-H	**$6.30**	⅛	6—32	⅜	..	...	1
3010-H	**6.40**	3/16	10—24	½	..	...	1½
3015-H	**7.00**	¼	¼—20	⅝	..	...	3
3020-H	**9.00**	5/16	5/16—18	⅞	..	...	7
3025-H	**12.00**	⅜	⅜—16	⅞	..	...	7

Toggle heads only are furnished in bulk or to order.

No. 1200 Star Four-Point Drills

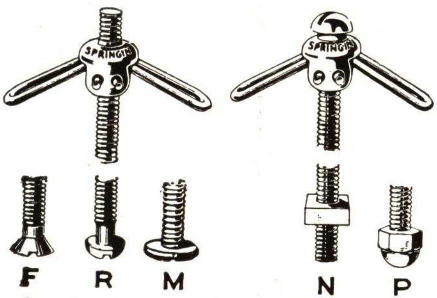


High-grade crucible tool steel is used in making Star drills. Hand-forged and hand-tempered for hand drilling in concrete, brick, or stone.

Cutting Diam. of Drill, In.	Per Dozen — Length, Inches			
	8	12	18	24
¼	**$8.25**	**$8.50**	**$11.00**	**$13.50**
5/16	**8.25**	**8.50**	**11.00**	**13.50**
⅜	**8.25**	**8.50**	**11.00**	**13.50**
7/16	....	**9.00**	**11.50**	**14.00**
½	**9.65**	**10.00**	**12.50**	**15.00**
9/16	....	**12.00**	**15.00**	**17.50**
⅝	....	**12.00**	**15.00**	**17.50**
¾	....	**14.00**	**17.50**	**20.00**
⅞	....	**16.00**	**20.00**	**22.50**
1	....	**18.00**	**22.50**	**25.00**

Cutting Diam. of Drill, In.	Per Dozen — Length, Inches		
	12	18	24
1⅛	**$24.00**	**$28.00**	**$32.00**
1¼	**30.00**	**35.00**	**40.00**
1⅜	**40.00**	**45.00**	**50.00**
1½	**50.00**	**56.00**	**62.00**
1⅝	**60.00**	**66.00**	**72.00**
1¾	**75.00**	**81.00**	**87.00**
1⅞	**90.00**	**97.00**	**104.00**
2	**105.00**	**112.00**	**120.00**
2¼	**135.00**	**145.00**	**165.00**
2½	**165.00**	**175.00**	**195.00**

No. 5500 Star Springin Toggle Bolts



F—with flat head screw.

R—with round head screw.

M—mushroom head, furnished in ⅛-inch diameter only.

N—reverse R or F screw and add nut on any size.

P—plumbers' toggle; reverse R or F screw and add cap nut on any size. Capnuts extra.

Resilient wings are tempered spring steel with a cam action against saddle which throws them to open position.

Threads are National Standard, not stove bolt threads.

With M or F Head Screws

No.	Per 100	Diameter and Length of Screw Inches	Wire Gage Threads per In.	Size Drill Required Inches	No. of Pieces in Box	No. in Shipping Carton	Ship. Wt. Lb. per 100
5506	**$6.60**	⅛x2	6–32	⅜	50	500	1½
5507	**6.80**	⅛x3	6–32	⅜	50	500	1¾
5508	**7.00**	⅛x4	6–32	⅜	50	500	2

With R, F, N or P Screws

5509	**$6.90**	3/16x2	10–24	½	50	250	2½
5510	**7.00**	3/16x3	10–24	½	50	250	3
5511	**7.30**	3/16x4	10–24	½	50	250	3½
5512	**8.40**	3/16x5	10–24	½	50	250	4½
5513	**8.90**	3/16x6	10–24	½	50	250	4½
5515	**7.70**	¼x3	¼–20	⅝	50	250	5½
5516	**8.00**	¼x4	¼–20	⅝	50	250	6½
5517	**9.40**	¼x5	¼–20	⅝	50	250	7½
5518	**9.80**	¼x6	¼–20	⅝	50	250	9
5520	**12.00**	5/16x3	5/16–18	⅞	25	125	8
5521	**13.00**	5/16x4	5/16–18	⅞	25	125	10
5522	**14.00**	5/16x5	5/16–18	⅞	25	125	11¼
5523	**15.00**	5/16x6	5/16–18	⅞	25	125	13
5525	**14.00**	⅜x3	⅜–16	⅞	25	125	13
5526	**16.00**	⅜x4	⅜–16	⅞	25	125	15
5527	**18.00**	⅜x5	⅜–16	⅞	25	125	18½
5528	**20.00**	⅜x6	⅜–16	⅞	25	125	20

With R or N Screws

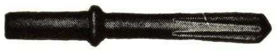
5536	**$25.00**	½x4	½–13	1⅛	25	125	26
5537	**28.00**	½x5	½–13	1⅛	25	125	31½
5538	**30.00**	½x6	½–13	1⅛	25	125	36

Toggle Heads Only

5506-H	**$6.30**	⅛	⅛– 6–32	⅜	..	...	½
5510-H	**6.40**	3/16	3/16–10–24	½	..	...	1
5515-H	**7.00**	¼	¼–20	⅝	..	...	2
5520-H	**9.00**	5/16	5/16–18	⅞	..	...	3
5525-H	**12.00**	⅜	⅜–16	⅞	..	...	3½
5535-H	**17.00**	½	½–13	1⅛	..	...	4

Toggle heads only are furnished in bulk or to order.

No. 1300 Star Drill Points



Made of tool steel with large shank only.
Sizes ½ inch and larger are furnished in 3-point style.

No.	Per Dozen	Diameter Inches	No. in Std. Pkg.	Wt., Lb. per Doz.
1315	**$8.50**	¼	12	¾
1320	**8.50**	5/16	12	¾
1325	**8.50**	⅜	12	1
1335	**10.00**	½	12	2
1340	**12.00**	9/16	12	2½
1345	**12.00**	⅝	12	3
1355	**14.00**	¾	12	5
1360	**16.00**	⅞	6	5
1365	**18.00**	1	6	7

Properties of Saturated Steam

Pressure		Temperature in Fahrenheit Degrees	Volume		Latent Heat in Fahrenheit Degrees	Total Heat Required to Generate 1 Lb. of Steam from Water at 32° under Constant Pressure in Heat Units
By Steam Gauge	Total		Compared with Water	Cu. Ft. of Steam from 1 Lb. of Water		
0	15	212.	1642	26.36	965.2	1146.1
5	20	228.	1229	19.72	952.8	1150.9
10	25	240.1	996	15.99	945.3	1154.6
15	30	250.4	838	13.46	937.9	1157.8
20	35	259.3	726	11.65	931.6	1160.5
25	40	267.3	640	10.27	926.	1162.9
30	45	274.4	572	9.18	920.9	1165.1
35	50	281.	518	8.31	916.3	1167.1
40	55	287.1	474	7.61	912.	1169.
45	60	292.7	437	7.01	908.	1170.7
50	65	298.	405	6.49	904.2	1172.3
55	70	302.9	378	6.07	900.9	1173.8
60	75	307.5	353	5.68	897.5	1175.2
65	80	312.	333	5.35	894.3	1176.5
70	85	316.1	314	5.50	891.4	1177.9
75	90	320.2	298	4.79	888.5	1179.1
80	95	324.1	283	4.55	885.8	1180.3
85	100	327.9	270	4.33	883.1	1181.4
90	105	331.3	257	4.14	880.7	1182.4
95	110	334.6	247	3.97	878.3	1183.5
100	115	338.	237	3.80	875.9	1184.5
110	125	344.2	219	3.51	871.5	1186.4
120	135	350.1	203	3.27	867.4	1188.2
130	145	355.6	190	3.06	863.5	1189.9
140	155	361.	179	2.87	959.7	1191.5
150	165	366.	169	2.71	856.2	1192.9

This table gives the value of all properties of saturated steam required in calculations connected with steam boilers.

Steam Boiler Information

A cubic inch of water evaporated under atmospheric pressure is approximately converted into 1 cubic foot of steam.

The horsepower of boilers, as per standard adopted by the A.S.M.E. is 30 pounds water evaporated per hour, at a pressure of 70 pounds per square inch and from a temperature of 100° Fahrenheit.

Well-designed boilers under successful operation will evaporate from 7 to 10 pounds of water per pound of first-class coal.

Each square foot of heating surface is considered sufficient to evaporate 2 pounds of water; therefore, for an engine using 30 pounds of water per h.p. per hour, each h.p. of the engine requires 15 square feet heating surface in the boiler.

On one square foot of fire grate can be burned on an average from 10 to 12 pounds hard coal, or 18 to 20 pounds soft coal per hour, with natural draft.

2¼ pounds of dry wood is equal to 1 pound of average quality soft coal.

Steam engines consume from 12 to 50 pounds of feed water, and from 1¼ to 7 pounds of coal per hour per indicated h.p.

Condensing engines require from 20 to 30 times the amount of feed water for condensing purposes; approximately for most engines. 1 to 1½ gallons condensing water per minute per indicated h.p.

Surface condensers for compound steam engines require about 2 square feet of cooling surface per h.p., ordinary engines will require more surface according to their economy in the use of steam. The air pump should be set lower than the condenser for satisfactory results.

The effect of a good air-pump and condenser should be to get 25 inches of vacuum and to make available about 10 pounds more mean effective pressure with the same terminal pressure, or to give the same mean effective pressure with a correspondingly less terminal pressure. Approximately, a good condenser will save ¼ of the fuel consumed, or, in other words, increase the power of the engine one-fourth, the fuel consumption remaining the same.

Useful Information

To reduce pounds pressure to feet head, multiply by 2.3.

To reduce heads in feet to pressure in pounds, multiply by .433.

Friction of liquids in pipes increases as the square of the velocity.

Doubling the diameter of a pipe increases its capacity four times.

To find the area of a pipe, square the diameter and multiply by .7854.

A cubic foot of water weighs 62½ pounds and contains 1728 cubic inches or 7½ U.S. gallons.

Approximately, every foot elevation of a column of water produces a pressure of ½ pound per square inch (actual .433).

A "miner's inch" of water is approximately equal to a supply of 12 gallons per minute. In California, 9 gallons.

The gallons per minute which a pipe will deliver equals .0408 times the square of the diameter, multiplied by the velocity in feet per minute.

To find the capacity of a pipe or cylinder in gallons, multiply the square of the diameter in inches by the length in inches and by .0034.

The weight of water in any length pipe is obtained by multiplying the length in feet by the square of the diameter in inches, and by .34.

To find the discharge from any pipe in cubic feet per minute, square the diameter and multiply by the velocity in feet per minute and by .00545.

U. S. gallon of water weighs 8⅓ pounds and contains 231 cubic inches. An imperial gallon weighs 10 pounds and contains 277 cubic inches.

To find the diameter of pipe in inches, divide the gallons per minute by the velocity in feet per minute, and multiply the square root of the quotient by 4.95.

To find the capacity of a given tank or cistern in U. S. gallons, square the diameter (in feet), and multiply by .7854, multiply by the height in feet, and by 7.48.

To find the discharge in U. S. gallons per minute from any pipe, square the diameter in inches, multiply by the velocity in feet per second and by 2.448.

The discharge from a pipe in cubic feet per second is equal to the mean velocity in feet per second multiplied by the area of cross section of pipe in square feet.

Sharp angles or sudden bends in pipes cause great increase in friction, consequently increase of power is necessary. Where change of direction is desired the same should be by means of long easy curves.

To determine *theoretical horsepower* to elevate water to a given height, multiply the number of gallons delivered per minute by 8.33 (weight of 1 gallon of cold water), multiply this result by the total head in feet (total head equals actual head plus head due to friction—see Friction Table). Divide this result by 33000 (33000 pounds elevated 1 foot in 1 minute equals 1 horsepower). To determine *actual horsepower* divide the theoretical horsepower by the efficiency of the pump. Example:

We wish to elevate 100 gallons per minute to an elevation of 100 feet through 200 feet of 2-inch pipe with two elbows and one valve in the pipe. Pump having an efficiency of 60 per cent. 100 Elevation + 43.5 (friction in 200 feet of 2-inch pipe) + 3 (friction in two elbows) + 1.7 (friction in one valve) = 148.2 Total Head.

$$\frac{100 \times 8.33 \times 148.2:}{33000} = 3.74 \text{ Theo. Hp. } 3.74 \div 60 \text{ Per Cent Eff. of Pump} = 6.2 \text{ Actual Hp.}$$

To determine the efficiency of a centrifugal pump divide the theoretical horsepower as above, by the actual horsepower required to operate the pump, and multiply the result by 100.

Example:

$$\frac{3.74 \text{ (Theo. Hp.)} \times 100}{6.2 \text{ (Actual Hp.)}} = 60 \text{ Per Cent Efficiency of Pump.}$$

Suction Lift means the vertical distance from the level of the water supply to the center of the pump, to which must be added the loss due to friction of the water in the suction pipe.

Discharge Head means the vertical distance from the center of the pump to the center of the discharge outlet where the water is delivered, to which must be added the loss due to friction of the water in the discharge pipe.

Total Head means the sum of the suction lift, discharge head, and all friction loss in both suction and discharge pipes.

Useful Data—Pipe and Fittings

Size In.	Threads per Inch	Perfect Threads	Length Perfect Thread In.	Size Tap Drill In.	O. D. Pipe In.	I. D. Pipe In.	Thickness Pipe In.
⅛	27	5.12	.190	21/64	.405	.269	.068
¼	18	5.23	.291	29/64	.540	.364	.088
⅜	18	5.34	.297	19/32	.675	.493	.091
½	14	5.47	.391	23/32	.840	.622	.109
¾	14	5.64	.403	15/16	1.050	.824	.113
1	11½	5.85	.509	1 3/16	1.315	1.049	.133
1¼	11½	6.13	.533	1 15/32	1.660	1.380	.140
1½	11½	6.32	.550	1 23/32	1.900	1.610	.145
2	11½	6.70	.583	2 3/16	2.375	2.067	.154
2½	8	7.10	.887	2 11/16	2.875	2.469	.203
3	8	7.60	.950	3 5/16	3.500	3.068	.216
3½	8	8.00	1.00	3 13/16	4.000	3.548	.226
4	8	8.40	1.05	4 3/16	4.500	4.026	.237
5	8	9.25	1.156	5¼	5.563	5.047	.258
6	8	10.10	1.262	6 5/16	6.625	6.065	.280
8	8	11.70	1.462	8⅜	8.625	7.981	.322
10	8	13.40	1.675	10 7/16	10.750	10.020	.365
12	8	15.00	1.875	12 27/64	12.750	12.000	.375

Size In.	Wt., Lbs. per Ft. with Cplgs.	I. D., Inches Extra Strong	Double Ex. Strong	Lin. Ft. per Gallon	Lin. Ft. per Cu. Ft.	Gal. per Foot	Radiating Surface per Ft.
⅛	.245	.215	.....	337.72	2526	.003	.106
¼	.425	.302	.....	185.10	1384.6	.005	.141
⅜	.568	.423	.....	107.85	753.9	.009	.177
½	.852	.546	.252	63.322	473.7	.015	.220
¾	1.134	.742	.434	36.116	270.2	.028	.275
1	1.684	.957	.599	22.292	166.67	.045	.344
1¼	2.281	1.278	.896	12.876	96.321	.078	.435
1½	2.731	1.500	1.100	9.455	70.777	.106	.497
2	3.678	1.939	1.503	5.738	42.961	.174	.622
2½	5.819	2.323	1.771	4.020	30.075	.249	.753
3	7.616	2.900	2.300	2.604	19.478	.384	.916
3½	9.202	3.364	2.728	1.947	14.566	.514	1.048
4	10.889	3.826	3.152	1.512	11.312	.661	1.179
5	14.810	4.813	4.063	.962	7.198	1.039	1.458
6	19.185	5.761	4.897	.666	4.984	1.500	1.736
8	28.809	7.625	6.875	.385	2.878	2.597	2.262
10	41.132	9.750	.....	.244	1.826	4.099	2.817
12	50.706	11.750	.....	.170	1.273	5.882	3.344

Useful Information

Table Converting Inches Vacuum to Suction Feet

To convert inches vacuum into feet, multiply by 1.13.

Vacuum Inches	Feet	Vacuum Inches	Feet	Vacuum Inches	Feet	Vacuum Inches	Feet
¼	.28	7¾	8.79	15¼	17.29	22¾	25.80
½	.56	8	9.07	15½	17.57	23	26.08
¾	.85	8¼	9.35	15¾	17.86	23¼	26.36
1	1.13	8½	9.64	16	18.14	23½	26.65
1¼	1.41	8¾	9.92	16¼	18.42	23¾	26.93
1½	1.70	9	10.21	16½	18.71	24	27.22
1¾	1.98	9¼	10.49	16¾	18.99	24¼	27.50
2	2.27	9½	10.77	17	19.28	24½	27.78
2¼	2.55	9¾	11.06	17¼	19.56	24¾	28.07
2½	2.84	10	11.34	17½	10.84	25	28.35
2¾	3.12	10¼	11.62	17¾	20.13	25¼	28.63
3	3.41	10½	11.90	18	20.41	25½	28.91
3¼	3.69	10¾	12.19	18¼	20.70	25¾	29.20
3½	3.98	11	12.47	18½	20.98	26	29.48
3¾	4.26	11¼	12.75	18¾	21.27	26¼	29.76
4	4.54	11½	13.04	19	21.55	26½	30.05
4¼	4.82	11¾	13.32	19¼	21.83	26¾	30.33
4½	5.11	12	13.61	19½	22.11	27	30.62
4¾	5.39	12¼	13.89	19¾	22.40	27¼	30.90
5	5.67	12½	14.18	20	22.68	27½	31.19
5¼	5.95	12¾	14.46	20¼	22.96	27¾	31.47
5½	6.23	13	14.74	20½	23.24	28	31.75
5¾	6.52	13¼	15.02	20¾	23.53	28¼	32.03
6	6.80	13½	15.31	21	23.81	28½	32.32
6¼	7.08	13¾	15.59	21¼	24.09	28¾	32.60
6½	7.37	14	15.88	21½	24.38	29	32.89
6¾	7.65	14¼	16.16	21¾	24.66	29¼	33.17
7	7.94	14½	16.45	22	24.95	29½	33.46
7¼	8.22	14¾	16.73	22¼	25.23	29¾	33.74
7½	8.50	15	17.01	22½	25.51	....	.....

Friction of Water in Pipes

Loss of Head in Feet Per 100 Feet of Straight Pipe

	Nominal Size, Inches							
	¾		1		1¼		1½	
	Actual Diameter, Inches							
	0.824		1.048		1.380		1.611	
Gal. per Min.	Vel. Ft. per Second	Friction	Vel. Ft. per Second	Friction	Vel. Ft. per Second	Friction	Vel. Ft. per Second	Friction
5	3.01	10.5	1.86	3.3	1.07	.84	.....	.....
10	6.02	38.	3.72	11.7	2.14	3.1	1.57	1.5
15	9.02	80.	5.6	26.	3.22	6.6	2.36	3.1
20	12.03	136.	7.44	42.	4.29	11.1	3.15	5.2
25	.....	.....	9.3	64.	5.36	16.6	3.93	8.0
30	.....	.....	11.15	89.	6.43	23.5	4.72	11.0
35	.....	.....	13.02	119.	7.51	31.2	5.51	14.7
40	.....	.....	.....	.....	8.58	40.	6.3	18.8
45	.....	.....	.....	.....	9.65	51.	7.08	23.2
50	.....	.....	.....	.....	10.72	60.	7.87	28.4
60	.....	.....	.....	.....	12.87	85.	9.44	39.6
70	.....	.....	.....	.....	15.01	113.	11.02	53.
80	.....	.....	.....	.....	.....	.....	12.59	68.
90	.....	.....	.....	.....	.....	.....	14.17	84.
100	.....	.....	.....	.....	.....	.....	15.74	102.

	Nominal Size, Inches							
	2		2½		3		4	
	Actual Diameter, Inches							
	2		2½		3		4	
Gal. per Min.	Vel. Ft. per Second	Friction	Vel. Ft. per Second	Friction	Vel. Ft. per Second	Friction	Vel. Ft. per Second	Friction
15	1.54	1.1	....	.....	....	.....	....	....
20	2.04	1.9	1.31	.61	....	.....	....	....
25	2.55	2.8	1.63	.92	....	.....	....	....
30	3.06	3.9	1.96	1.3	1.36	.54	....	....
35	3.57	5.1	2.29	1.7	1.59	.71	....	....
40	4.08	6.6	2.61	2.2	1.82	.91	....	....
45	4.6	8.2	2.95	2.8	2.05	1.1	....	....
50	5.11	9.9	3.27	3.3	2.27	1.4	1.28	.34
60	6.13	13.9	3.92	4.7	2.72	1.9	1.53	.47
70	7.15	18.4	4.58	6.2	3.18	2.6	1.79	.63
80	8.17	23.7	5.23	7.9	3.63	3.3	2.04	.81
90	9.19	29.4	5.88	9.8	4.09	4.1	2.3	1.0
100	10.21	35.8	6.54	12.0	4.54	5.0	2.55	1.22
110	11.23	42.9	7.2	14.5	5.0	6.0	2.81	1.46
120	12.25	50.	7.84	16.8	5.45	7.0	3.06	1.71
130	13.28	58.	8.5	19.7	5.9	8.2	3.32	2.0
140	14.3	67.	9.15	22.3	6.35	9.2	3.57	2.3
150	15.32	76.	9.8	25.5	6.8	10.5	3.83	2.6

Friction loss of standard elbows..loss in 8 feet of straight pipe. Friction loss of standard glove valves=loss in 25 feet of straight pipe.

Pounds per Square Inch to Head in Feet

For Water at 62° F., Weighing 62.364 Pounds per Cubic Foot

Pounds per Sq. In.	Head in Feet	Pounds per Sq. In.	Head in Feet	Pounds per Sq. In.	Head in Feet	Pounds per Sq. In.	Head in Feet	Pounds per Sq. In.	Head in Feet
1	2.309	23	53.12	45	103.9	67	154.7	89	205.5
2	4.619	24	55.43	46	106.2	68	157.0	90	207.8
3	6.928	25	57.74	47	108.5	69	159.3	91	210.2
4	9.238	26	60.05	48	110.8	70	161.7	92	212.5
5	11.55	27	62.36	49	113.2	71	163.0	93	214.8
6	13.86	28	64.66	50	115.5	72	166.3	94	217.1
7	16.17	29	66.97	51	117.8	73	168.6	95	219.4
8	18.48	30	69.28	52	120.1	74	170.9	96	221.7
9	20.78	31	71.59	53	122.4	75	173.2	97	224.0
10	23.09	32	73.90	54	124.7	76	175.5	98	226.3
11	25.40	33	76.21	55	127.0	77	177.8	99	228.6
12	27.71	34	78.52	56	129.3	78	180.1	100	230.9
13	30.02	35	80.83	57	131.6	79	182.4	105	242.4
14	32.33	36	83.14	58	133.9	80	184.8	110	254.0
15	34.64	37	85.45	59	136.3	81	187.1	115	265.5
16	36.95	38	87.76	60	138.6	82	189.4	120	277.1
17	39.26	39	90.07	61	140.9	83	191.7	125	288.6
18	41.57	40	92.38	62	143.2	84	194.0	130	300.2
19	43.88	41	94.69	63	145.5	85	196.3	135	311.7
20	46.19	42	97.00	64	147.8	86	198.6	140	323.3
21	48.50	43	99.31	65	150.1	87	200.9	145	334.8
22	50.81	44	101.6	66	152.4	88	203.2	150	346.4

Water

1 cubic inch weighs .0361 pounds.

1 pound = 27.7 cubic inches.

1 cubic foot = 62.4245 pounds at 39° F.; 7.48 gallons U.S.; 6.2321 gallons Imperial.

1 gallon U.S. = 8.355 pounds; 231 cubic inches; .113368 cubic feet.

1 Imperial gallon = 10 pounds at 62° F.; 277.274 cubic inches; .16046 cubic feet.

1 pound pressure = 2.31 feet in height.

1 foot in height = .433 pounds pressure.

Petroleum weighs 6½ pounds per U. S. gallon, 42 gallons to the barrel.

To convert Imperial gallons into U. S. gallons, multiply by the factor 1.2. To convert U. S. gallons into Imperial gallons, multiply by the factor .8333.

A miner's inch is a measure for flow of water, and is the quantity of water that will flow in one minute through an opening 1 inch square in a plank 2 inches thick under a head of 6½ inches to the center of the orifice. This is equivalent, approximately, to 1.53 cubic feet, or 11½ gallons per minute.

To find the diameter of pump plungers to a pump delivering a given quantity of water at 100 feet piston speed per minute, divide the number of gallons by 4, then extract the square root and the result will be the diameter in inches of the plunger.

To find the number of gallons delivered per minute by a single double-acting pump at 100 feet piston speed per minute, square the diameters of the plungers then multiply by 4.

To find the horsepower necessary to elevate water to a given height, multiply the weight of the water elevated per minute by the height in feet and divide the product by 33000 (an allowance should be made for water friction and a further allowance for losses in the steam cylinder, say from 20 to 30 per cent).

The mean pressure of the atmosphere is usually estimated at 14.4 pounds per square inch, so that with a perfect vacuum it will sustain a column of mercury 29.9 inches, or a column of water 33.9 feet high at sea level.

To determine the proportion between the steam and the pump cylinder, multiply the given area of the pump cylinder by resistance on the pump in pounds per square inch and divide the product by the available pressure of steam in pounds per square inch. The product equals the area of the steam cylinder. To this must be added an extra area to overcome the friction, which is usually taken at 25 per cent.

The resistance of friction in the flow of water through pipes of uniform diameters is independent of the pressure and increases directly as the length and square of the velocity of the flow, and inversely as the diameter of the pipe. With wooden pipes the friction is 2.75 times greater than in metallic. Doubling the diameter increases the capacity 4 times.

To determine the velocity in feet per minute necessary to discharge a given volume of water in a given time, multiply the number of cubic feet of water by 144 and divide the product by the area of the pipe in inches.

To determine the area of a required pipe, the volume and velocity of water being given, multiply the number of cubic feet of water by 144 and divide the product by the velocity in feet per minute.

Water Required per Minute to Feed Boilers

Using the Centennial Standard 30 pounds or 3.6 gallons of water per hp. per hour, evaporated from 100° Fahrenheit to 70 pounds steam pressure per square inch.

Hp. Boiler	Feed Water Gal.	Hp. Boiler	Feed Water Gal.	Hp. Boiler	Feed Water Gal.	Hp. Boiler	Feed Water Gal.	Hp. Boiler	Feed Water Gal.
20	1.2	**60**	3.6	**110**	6.6	**190**	11.4	**400**	24.0
25	1.5	**65**	3.9	**120**	7.2	**200**	12.0	**450**	27.0
30	1.8	**70**	4.2	**130**	7.8	**225**	13.5	**500**	30.0
35	2.1	**75**	4.5	**140**	8.4	**250**	15.0	**600**	36.0
40	2.4	**80**	4.8	**150**	9.0	**275**	16.5	**700**	42.0
45	2.7	**85**	5.1	**160**	9.6	**300**	18.0	**800**	48.6
50	3.0	**90**	5.4	**170**	10.2	**325**	19.5	**900**	54.0
55	3.3	**100**	6.0	**180**	10.8	**350**	21.0	**1000**	60.0

Surface Area of Pipe

Square Feet of Surface per Lineal Foot of Pipe

On all lengths over one foot, fractions less than tenths are added to or dropped.

Lgth. Pipe Ft.	Size Pipe, Inches									
	¾	1	1¼	1½	2	2½	3	4	5	6
1	.27	.34	.43	.49	.62	.75	.91	1.17	1.45	1.73
2	.5	.7	.9	1.	1.2	1.5	1.8	2.4	2.9	3.5
3	.8	1.	1.3	1.5	1.9	2.3	2.7	3.5	4.4	5.2
4	1.1	1.4	1.7	2.	2.5	3.	3.6	4.7	5.8	7.
5	1.4	1.7	2.2	2.4	3.1	3.8	4.6	5.8	7.3	7.7
6	1.6	2.1	2.6	2.9	3.7	4.5	5.5	7.	8.7	10.5
7	1.9	2.4	3.	3.4	4.4	5.3	6.4	8.2	10.2	12.1
8	2.2	2.8	3.5	3.9	5.	6.	7.3	9.4	11.6	13.9
9	2.5	3.1	3.9	4.4	5.6	6.8	8.2	10.6	13.1	15.7
10	2.7	3.5	4.3	4.9	6.2	7.5	9.1	11.8	14.6	17.4
11	3.	3.8	4.8	5.4	6.8	8.3	10.	12.9	16.	19.1
12	3.3	4.1	5.2	5.9	7.5	9.	11.	14.1	17.4	20.9
13	3.6	4.5	5.6	6.4	8.1	9.8	11.9	15.3	18.9	22.6
14	3.8	4.8	6.1	6.9	8.7	10.5	12.8	16.5	20.3	24.3
15	4.1	5.2	6.5	7.4	9.3	11.3	13.7	17.6	21.8	26.1
16	4.4	5.5	6.9	7.9	10.	12.	14.6	18.8	23.2	27.8
17	4.7	5.9	7.4	8.4	10.6	12.8	15.5	20.	24.7	29.5
18	5.	6.2	7.8	8.9	11.2	13.5	16.5	21.2	26.2	31.3
19	5.2	6.6	8.3	9.4	11.8	14.3	17.4	22.3	27.6	33.1
20	5.5	6.9	8.7	9.9	12.5	15.	18.3	23.5	29.1	34.8
21	5.8	7.3	9.1	10.4	13.	15.8	19.2	24.7	30.5	36.5
22	6.	7.6	9.6	10.9	13.7	16.5	20.2	25.9	32.	38.3
23	6.3	8.	10.	11.3	14.3	17.3	21.1	27.	33.5	40.
24	6.6	8.3	10.4	11.9	14.9	18.	22.	28.2	34.9	41.7
25	6.9	8.6	10.9	12.3	15.6	18.8	22.9	29.3	36.3	43.5
26	7.1	9.	11.3	12.8	16.2	19.5	23.8	30.5	37.8	45.2
27	7.4	9.4	11.7	13.3	16.8	20.3	24.7	31.7	39.3	47.
28	7.7	9.7	12.2	13.8	17.4	21.	25.6	32.9	40.7	48.7
29	8.	10.	12.6	14.3	18.	21.8	26.6	34.1	42.2	50.4
30	8.3	10.4	13.	14.8	18.7	22.5	27.5	35.3	43.6	52.1
31	8.5	10.7	13.5	15.3	19.3	23.3	28.4	36.4	45.1	53.9
32	8.8	11.1	13.9	15.8	19.9	24.1	29.3	37.6	46.5	55.6
33	9.1	11.4	14.3	16.3	20.5	24.8	30.2	38.8	48.	57.4
34	9.4	11.7	14.7	16.8	21.2	25.6	31.1	40.	49.5	59.1
35	9.6	12.1	15.2	17.3	21.8	26.3	32.	41.1	50.9	60.8
36	9.9	12.5	15.6	17.8	22.4	27.	33.	42.3	52.4	62.6
37	10.2	12.8	16.1	18.3	23.	27.8	33.9	43.5	53.8	64.3
38	10.5	13.2	16.5	18.8	23.7	28.5	34.8	44.6	55.2	66.
39	10.7	13.5	16.9	19.3	24.3	29.3	35.7	45.8	56.7	67.8
40	11.	13.8	17.4	19.8	24.9	30.1	36.6	47.	58.2	69.5
41	11.3	14.2	17.8	20.3	25.5	30.8	37.6	48.2	59.6	71.3
42	11.5	14.5	18.2	20.8	26.1	31.6	38.5	49.4	61.1	73.
43	11.8	14.9	18.7	21.3	26.8	32.3	39.4	50.6	62.5	74.8
44	12.1	15.2	19.1	21.8	27.4	33.1	40.3	51.7	64.	76.5
45	12.4	15.6	19.5	22.2	28.	33.8	41.2	52.9	65.5	78.2
46	12.7	15.9	20.	22.7	28.6	34.6	42.2	54.	67.	80.
47	12.9	16.3	20.4	23.2	29.2	35.3	43.	55.2	68.4	81.7
48	13.2	16.6	20.8	23.7	29.9	36.1	43.9	56.4	69.8	83.5
49	13.5	17.	21.3	24.2	30.5	36.8	44.8	57.6	71.2	85.1
50	13.8	17.3	21.7	24.7	31.1	37.6	45.8	58.7	72.7	87.

The above information is quoted from standard authorities. Not guaranteed.

Radiators

A good type of cast iron radiator, direct, should condense about .25 of a pound of steam per square foot of surface per hour, with steam at 2 pounds pressure and a difference of 150° between the temperature of the steam and that of the surrounding atmosphere.

Under ordinary conditions, 1 square foot of direct steam radiating surface will heat approximately in:

Bath Room, Living Room, with Two or Three Exposures with Large Amount of Glass	40	Cubic Feet
Living Room, One or Two Exposures, with Large Amount of Glass	50	" "
Living Room, One Exposure, Medium Amount of Glass	60	" "
Sleeping Rooms	55 to 70	" "
Halls	50 " 70	" "
School Rooms	60 " 80	" "
Churches and Auditoriums of Large Cubic Contents and High Ceilings	65 " 100	" "
Lofts, Workshops and Factories	75 " 150	" "

If indirect radiators are used, allow not less than 50 per cent more surface than for direct, and for direct indirect 25 per cent more. For hot water heating add from 25 to 33⅓ per cent.

Pump Installations

Suggestions for Installing and Repairing Iron Pumps

Installing Shallow Well Pumps

Submerge the cylinder in a pail or tub of water, so that the leathers will be well soaked. To find length of suction pipe wanted, measure from platform to bottom of well, and deduct the length the bottom of cylinder extends below platform, deducting also the length of the strainer and enough more to make sure the strainer is far enough from the bottom of the well so that it will not stir up any sand or sediment. Be sure the suction pipe is screwed airtight into lower cylinder cap, and that lower cylinder cap is screwed tight on the cylinder shell. It is easier to take the lower cap off the cylinder and screw the suction pipe into it, and lower them in the well, holding the cap above platform; then screw the cylinder shell tightly into the lower cap, using a large wrench to do this, as this joint must be tight; then lower the pump down to the platform and fasten it to platform with bolts or lag screws.

Installing Deep Well Pumps

Measure the depth of the well. Lay the pump on the ground and string out the proper amount of pipe. Near the bottom, below water level if possible, locate the cylinder with plunger 1 inch or more above the valve; then from the cylinder upward, lay out, side by side with each length of pipe, a length of steel pump rod, making sure that the upper end of the rod is at least 3 inches above the upper end of its corresponding length of pipe, so it can be coupled or uncoupled. Be sure that proper allowance is made for the threads when pipe and rod are screwed together. Screw suction pipe and strainer into lower cap of cylinder, and lower them in well, keeping cylinder above platform; then screw on the first length of rod, slipped inside the first length of pipe above the cylinder, the pipe being held above the rod coupling until it is screwed tight, then the pipe is screwed tight into the cylinder; then the next length of pipe and rod is attached in the same manner until the pump standard is reached. Piston rod or slide rod of pump then is to be screwed on to the rod, which must be cut to exact measurement here, and the pump standard is then screwed on to the pipe and fastened to the platform. Pipe holders and dogs for holding, lifting and lowering pipe in wells are shown among the tools in this catalogue.

Be sure that all joints are tightly screwed together, and do not put more than one length of pipe below the cylinder.

Locating Trouble

When pumps lose their priming and the water leaks back, the cause of the trouble is below the plunger. The valve seat or the valve may be worn, or something may be lodged between valve and valve seat, preventing the valve and seat from making a tight joint. Or, it may be that the cap is not screwed tight to the cylinder shell, or, in case of the cylinder being above the water, there may be a leak in the suction pipe. In case the pump holds its priming but brings less water than it should, the probabilities are that the plunger leather is worn out, or that the face of the plunger follower and the plunger poppet do not make a good fit. In this case it is necessary to either releather the plunger or to true up the face of the plunger follower and poppet.

At times pumps work hard on the up stroke of plunger, and there is a tendency to jerk the plunger back; in this case the suction pipe or strainer is clogged, and very often it is found that the end of suction pipe is in the mud or sand.

Useful Information

Hints to Well Drillers

It is a well-known fact that the lifting of water by means of a Pump is due primarily to the atmospheric pressure, without which the Pump, as we use it today, would be of no avail. Scientists reckon our atmosphere to be 120 miles deep at the sea level, where it exerts a pressure of 14.73 pounds to the square inch, and as we ascend, the pressure naturally decreases, so that if a city is 1,320 feet above sea level, the atmospheric pressure is only 14.02 pounds.

When a Pump is set in working order in a well, the atmospheric pressure on the water inside the pipe is exactly equal to the pressure on the water outside of the pipe, so that the water remains at rest, but as soon as the plunger is moved up and down in pumping, the air in the pipe below the cylinder is pumped up, thus leaving a partial vacuum and then the pressure of the air inside the pipe (below the cylinder) becomes less than the pressure on the outside, so that the atmosphere pressing on the water outside of the pipe forces the water up into the suction pipe.

To quote an old axiom: "Nature abhors a vacuum," and when you remove the air from the suction pipe, nature immediately exerts herself to fill that space again, and thus water is forced up into the pipe to replace the air that has been removed; thus as we continue to pump the air from the pipe, the water continues to rise until it has reached the cylinder, where it rises above the plunger and is then lifted up to the surface, independent of any atmospheric pressure. A column of water, at the sea level, 33.95 feet high, will exert the same pressure per square inch as the atmosphere, therefore the atmosphere will sustain a column of water 33.95 feet high. It follows then that the limit of suction at sea level is 33.95 feet, but it is beyond the power of man to create a perfect vacuum, so that 25 or 28 feet is about the limit that can be attained for all practical purposes.

As we ascend from the sea level to the inland hills, plateaus and mountains the limit of suction is, of course, decreased so that we may consider 28 feet to be the extreme limit of suction, though it is safest and best to reckon on only 20 to 25 feet, as better results will be attained.

From the foregoing, it will be seen that the cylinder must always be placed within 28 feet of the water at least, and preferably within 20 to 25 feet. It might be well to add here, that the nearer a cylinder is placed to the water, the better it will work, and where possible, it is always advisable to place the cylinder directly in the water.

Suction Pipe

The suction pipe is the pipe below the lower valves, irrespective of whether the valves are in the pump itself or in the cylinder below the pump.

We have already shown the practical vertical height of this pipe, but it is also possible to run the suction pipe a considerable distance horizontally, provided it is run in a gradual slope from the pump or cylinder to the well, but when run horizontally in this manner, it is well to use a foot valve at the bottom of the pipe so as to hold the water in the pipe when pump is not in use. Where this is done, however, the pipe must be below frost, otherwise it will freeze in extremely cold weather.

Hot Water

A pump will not draw hot water any distance, because the vapor or steam rising from the water will fill the suction pipe instead of water, therefore, for pumping hot water, the cylinder should be very near or directly in the water, thus forcing the water upward instead of lifting it by suction. Hot water pumps should also be provided with metal valves throughout.

The above also applies to volatile oils, such as gasoline, etc., but not to kerosene.

Useful Information

Amount of Water Discharged per Stroke By a Single-acting Pump

The Diameter and Length of Stroke Being Known

The figures at the extreme left of the table are piston or plunger diameters; the line of figures across the top are piston, or plunger strokes; the figures in the body of the table are the capacity, or displacement, in gallons, corresponding to a single stroke. To find the capacity for one revolution, multiply the capacity for a single stroke by two.

Diam. Cyl. In.	Length of Stroke, Inches						
	2	3	4	5	6	7	12
1¼	.0106	.0159	.0212	.0266	.0319	.0372	.0637
1⅜	.0128	.0192	.0256	.0321	.0385	.0419	.0770
1½	.0153	.0229	.0306	.0382	.0459	.0535	.0918
1¾	.0208	.0312	.0416	.0521	.0625	.0729	.1249
2	.0272	.0408	.0544	.0680	.0816	.0952	. 1632
2¼	.0344	.0516	.0688	.0860	.1033	.1205	.2063
2½	.0425	.0637	.0850	.1062	.1275	.1487	.2550
2¾	.0514	.0771	.1028	.1285	.1543	.1799	.3085
3	.0612	.0918	.1224	.1530	.1836	.2142	.3672
3¼	.0718	.1077	.1436	.1795	.2154	.2513	.4312
3½	.0833	.1249	.1666	.2082	.2499	.2915	.4998
3¾	.0956	.1434	.1912	.2390	.2868	.3346	.5736
4	.1088	.1632	.2176	.2720	.3264	.3808	.6528
4¼	.1228	.1842	.2456	.3070	.3684	.4298	.7368
4½	.1377	.2065	.2754	.3442	.4131	.4819	.8262
4¾	.1534	.2301	.3068	.3835	.4602	.5369	.9204
5	.1700	.2550	.3400	.4250	.5100	.5950	1.0200
5¼	.1874	.2811	.3748	.4685	.5622	.6559	1.1240
5½	.2057	.3085	.4114	.5142	.6171	.7199	1.2342
5¾	.2248	.3372	.4496	.5620	.6744	.7868	1.3480
6	.2448	.3672	.4896	.6120	.7314	.8568	1.4688
6¼	.2656	.3984	.5312	.6640	.7968	.9296	1.5930
6½	.2872	.4308	.5744	.7182	.8610	1.0052	1.7955
6¾	.3098	.4647	.6196	.7745	.9294	1.0840	1.8580
7	.3332	.4998	.6664	.8330	.9996	1.1662	1.9992
7¾	.4084	.6126	.8168	1.0210	1.2250	1.4290	2.4500
8	.4352	.6528	.8704	1.0880	1.3056	1.5232	2.6112
9	.5508	.8263	1.1010	1.3770	1.6524	1.9278	3.3048
10	.6800	1.0200	1.3600	1.7000	2.0400	2.3800	4.0800
11	.8227	1.2341	1.6451	2.0570	2.4640	2.8790	4.9367
12	.9892	1.4680	1.9584	2.4480	2.9376	3.4222	5.8752
13	1.1490	1.7230	2.2970	2.8720	3.4450	4.0220	6.8940
14	1.3320	1.9980	2.6650	3.3310	3.9970	4.6640	7.9940
15	1.5290	2.2940	3.0590	3.8240	4.5890	5.3540	9.1780
16	1.7400	2.6100	3.4800	4.3500	5.2200	6.0900	10.4400
18	2.2020	3.3030	4.4040	5.5050	6.6060	7.7070	13.2100
20	2.7200	4.0800	5.4400	6.8000	8.1600	9.5200	16.3200

To obtain the capacity of a pump with diameter of cylinder given in the table, but with a longer stroke than 12 inches (the longest stroke given in table), add or multiply the capacity to represent the required length of stroke.

Useful Information

Capacity of Pumps at 100 Feet Piston Speed

Ordinarily, a travel of 100 feet per minute is considered a fair speed for pistons of pumps.

For feeding boilers it should not exceed fifty feet per minute. In fire pumps, where the largest quantity of water is required the speed may exceed 200 feet per minute.

Weight and Size of Different Standard Gallons of Water

	Cubic Inches in a Gallon	Weight of a Gallon in Pounds	Gallons in a Cubic Foot	Weight of a Cubic Foot of Water English Std.
Imperial or English	277.274	10.00	6.232102	62.321 lb.
United States......	231	8.355	7.480519	Avoirdupois

Useful Information

No. of U. S. Gallons in Round Tank for One Foot in Depth

Diameter of Tank Ft.	Diameter of Tank In.	Capacity U. S. Gallons	Cu. Ft. and Area Sq. Ft.	Diameter of Tank Ft.	Diameter of Tank In.	Capacity U. S. Gallons	Cu. Ft. and Area Sq. Ft.
1	..	5.87	.785	9	..	475.89	63.62
1	1	6.89	.922	9	3	502.70	67.20
1	2	8.	1.069	9	6	530.24	70.88
1	3	9.18	1.227	9	9	558.51	74.66
1	4	10.44	1.396	10	..	587.52	78.54
1	5	11.79	1.576	10	3	617.26	82.52
1	6	13.22	1.767	10	6	647.74	86.59
1	7	14.73	1.969	10	9	678.95	90.76
1	8	16.32	2.182	11	..	710.90	95.03
1	9	17.99	2.405	11	3	743.58	99.40
1	10	19.75	2.640	11	6	776.99	103.87
1	11	21.58	2.885	11	9	811.14	108.43
2	..	23.50	3.142	12	..	846.03	113.10
2	1	25.50	3.409	12	3	881.65	117.86
2	2	27.58	3.687	12	6	918.	122.72
2	3	29.74	3.976	12	9	955.09	127.86
2	4	31.99	4.276	13	..	992.91	132.72
2	5	34.31	4.587	13	3	1031.5	137.89
2	6	36.72	4.909	13	6	1070.8	143.14
2	7	39.21	5.241	13	9	1110.8	148.49
2	8	41.78	5.585	14	..	1151.5	153.94
2	9	44.43	5.940	14	3	1193.	159.48
2	10	47.16	6.305	14	6	1235.3	165.13
2	11	49.98	6.681	14	9	1278.2	170.87
3	..	52.88	7.069	15	..	1321.9	176.71
3	1	55.86	7.467	15	3	1366.4	182.65
3	2	58.92	7.876	15	6	1411.5	188.69
3	3	62.06	8.296	15	9	1457.4	194.83
3	4	65.28	8.727	16	..	1504.1	201.06
3	5	68.58	9.168	16	3	1551.4	207.39
3	6	71.97	9.621	16	6	1599.5	213.82
3	7	75.44	10.085	16	9	1648.4	220.35
3	8	78.99	10.559	17	..	1697.9	226.98
3	9	82.62	11.045	17	3	1748.2	233.71
3	10	86.33	11.541	17	6	1799.3	240.53
3	11	90.13	12.048	17	9	1851.1	247.45
4	..	94.	12.566	18	..	1903.6	254.47
4	1	97.96	13.095	18	3	1956.8	261.59
4	2	102.	13.635	18	6	2010.8	268.80
4	3	106.12	14.186	18	9	2065.5	276.12
4	4	110.32	14.748	19	..	2120.9	283.53
4	5	114.61	15.321	19	3	2177.1	291.04
4	6	118.97	15.90	19	6	2234.	298.65
4	7	123.42	16.50	19	9	2291.7	306.35
4	8	127.95	17.10	20	..	2350.1	314.16
4	9	132.56	17.72	20	3	2409.2	322.06
4	10	138.25	18.35	20	6	2469.1	330.06
4	11	142.02	18.99	20	9	2529.6	338.16
5	..	146.88	19.63	21	..	2591.	346.36
5	1	151.82	20.29	21	3	2653.	354.66
5	2	156.83	20.97	21	6	2715.8	363.05
5	3	161.93	21.65	21	9	2779.3	371.54
5	4	167.12	22.34	22	..	2843.6	380.13
5	5	172.38	23.04	22	3	2908.6	388.82
5	6	177.72	23.76	22	6	2974.3	397.61
5	7	183.15	24.48	22	9	3040.8	406.49
5	8	188.66	25.22	23	..	3108.	415.48
5	9	194.25	25.97	23	3	3175.9	424.56
5	10	199.92	26.73	23	6	3244.6	433.74
5	11	205.67	27.49	23	9	3314.	443.01
6	..	211.51	28.27	24	..	3384.1	452.39
6	3	229.50	30.68	24	3	3455.	461.86
6	6	248.23	33.18	24	6	3526.6	471.44
6	9	267.69	35.78	24	9	3597.9	481.11
7	..	287.88	38.48	25	..	3672.	490.87
7	3	308.81	41.28	25	3	3745.8	500.74
7	6	330.48	44.18	25	6	3820.3	510.71
7	9	352.88	47.17	25	9	3895.6	520.77
8	..	376.01	50.27	26	..	3971.6	530.93
8	3	399.88	53.46	26	3	4048.4	541.19
8	6	424.48	56.75	26	6	4125.9	551.55
8	9	449.82	60.13	26	9	4204.1	562.

To find the capacity of tanks larger than given in the table, set table for tank one-half of the given size, and multiply its capacity by 4, or one of one-third its size and multiply by 9, etc. Thirty-one and one-half gallons equal one barrel. To find the capacity of a square tank, find the capacity of a round tank with diameter same as length of side, and divide by .7854. A 10-foot diameter round tank, 1 foot high, holds 587.52 gallons. A square tank 10x10 feet by 1 foot high equals 587.52 divided by .7854 equals 748 gallons.

Table Giving the Circumference and Area of Circles

Diam., In.	Circum., In.	Area, In.	Diam., In.	Circum., In.	Area, In.
⅛	.3926	.0122	41	128.81	1320.25
¼	.7854	.0491	42	131.95	1385.44
⅜	1.178	.1104	43	135.09	1452.20
½	1.570	.1963	44	138.23	1520.53
⅝	1.963	.3067	45	141.37	1590.43
¾	2.356	.4417	46	144.51	1661.90
⅞	2.748	.6013	47	147.65	1734.94
1	3.141	.7854	48	150.80	1809.56
1⅛	3.534	.9940	49	153.94	1885.74
1¼	3.927	1.227	50	157.08	1963.50
1⅜	4.319	1.484	51	160.22	2042.82
1½	4.712	1.767	52	163.36	2123.72
1⅝	5.105	2.073	53	166.50	2206.18
1¾	5.497	2.405	54	169.65	2290.22
1⅞	5.890	2.761	55	172.79	2375.83
2	6.283	3.141	56	175.93	2463.01
2¼	7.068	3.976	57	179.07	2551.76
2½	7.854	4.908	58	182.21	2642.08
2¾	8.639	5.939	59	185.35	2733.97
3	9.424	7.068	60	188.50	2827.43
3¼	10.21	8.295	61	191.64	2922.47
3½	10.99	9.621	62	194.78	3019.07
3¾	11.78	11.044	63	197.92	3117.25
4	12.56	12.566	64	201.06	3216.99
4½	14.13	15.904	65	204.20	3318.31
5	15.70	19.635	66	207.34	3424.29
5½	17.27	23.758	67	210.49	3525.65
6	18.84	28.274	68	213.63	3631.68
6½	20.42	33.183	69	216.77	3739.28
7	21.99	38.484	70	219.91	3848.46
7½	23.56	44.178	71	223.05	3959.20
8	25.13	50.265	72	226.19	4071.50
8½	26.70	56.745	73	229.34	4185.39
9	28.27	63.617	74	232.48	4300.84
9½	29.84	70.882	75	235.62	4417.86
10	31.41	78.54	76	238.76	4536.46
10½	32.98	86.59	77	241.90	4656.64
11	34.55	95.03	78	245.04	4778.36
11½	36.12	103.86	79	248.19	4901.67
12	37.69	113.09	80	251.33	5026.55
12½	39.27	122.71	81	254.47	5153.00
13	40.84	132.73	82	257.61	5281.02
13½	42.41	143.13	83	260.75	5410.61
14	43.98	153.93	84	263.89	5541.77
14½	45.55	165.13	85	267.04	5674.50
15	47.12	176.78	86	270.18	5808.80
15½	48.69	188.69	87	273.32	5944.68
16	50.26	201.06	88	276.46	6082.12
16½	51.83	213.82	89	279.60	6221.14
17	53.40	226.98	90	282.74	6361.73
17½	54.97	240.52	91	285.88	6503.88
18	56.54	254.46	92	289.03	6647.61
18½	58.11	268.80	93	292.17	6792.91
19	59.69	283.52	94	295.31	6939.78
19½	61.26	298.64	95	298.45	7088.22
20	62.83	314.16	96	301.59	7238.23
20½	64.40	330.06	97	304.73	7389.81
21	65.97	346.36	98	307.88	7542.96
21½	67.54	363.05	99	311.02	7697.69
22	69.11	380.13	100	314.16	7853.98
22½	70.68	397.60	101	317.30	8011.85
23	72.25	415.47	102	320.44	8171.28
23½	73.82	433.73	103	323.58	8332.29
24	75.39	452.39	104	326.73	8494.87
24½	76.96	471.43	105	329.87	8659.01
25	78.54	490.87	106	333.01	8824.73
26	81.68	530.93	107	336.15	8992.02
27	84.82	572.55	108	339.29	9160.88
28	87.96	615.75	109	342.43	9331.32
29	91.10	660.52	110	345.58	9503.32
30	94.24	706.86	111	348.72	9676.89
31	97.38	754.76	112	351.86	9852.03
32	100.53	804.24	113	355.00	10028.75
33	103.67	855.30	114	358.14	10207.03
34	106.81	907.92	115	361.28	10386.89
35	109.96	962.11	116	364.42	10568.32
36	113.10	1017.88	117	367.57	10751.32
37	116.24	1075.21	118	370.71	10935.88
38	119.38	1134.11	119	373.85	11122.02
39	122.52	1194.59	120	376.99	11309.73
40	125.66	1256.64	121	380.13	11499.01

Weights and Measures

Troy Weight

24 grains =1 pwt.
20 pwts. =1 ounce.
12 ounces = pound.
Used for weighing gold, silver and jewels.

Apothecaries' Weight

20 grains =1 scruple.
3 scruples =1 dram.
8 drams =1 ounce
12 ounces =1 pound.

Avoirdupois Weight

27$\frac{11}{32}$ grains =1 dram.
16 drams =1 ounce.
16 ounces =1 pound.
25 pounds =1 quarter.
4 quarters =1 cwt.
2,000 lb. =1 short ton.
2,240 lb. =1 long ton.

Dry Measure

2 pints =1 quart.
8 quarts =1 peck.
4 pecks =1 bushel.
36 bushels =1 chaldron.

Liquid Measure

4 gills =1 pint.
2 pints =1 quart.
4 quarts =1 gallon.
31½ gallons =1 barrel.
2 barrels =1 hogshead.

Time Measure

60 seconds =1 minute.
60 minutes =1 hour.
24 hours =1 day.
7 days =1 week.
28, 29, 30 or 31 days =1 calender month (30 days =1 month in computing interest).
365 days =1 year.
366 days =1 leap year.

Circular Measure

60 seconds =1 minute.
60 minutes =1 degree.
30 degrees =1 sign.
90 degrees =1 quadrant.
4 quadrants =12 signs, or 360 degrees =1 circle.

Long Measure

12 inches =1 foot.
3 feet =1 yard
5½ yards =1 rod.
40 rods =1 furlong.
8 furlongs =1 stat. mile.
3 miles =1 league.

Cloth Measure

2¼ inches =1 nail.
4 nails =1 quarter.
4 quarters =1 yard

Mariners' Measure

6 feet =1 fathom.
120 fathoms =1 cable length.
7½ cable lengths =1 mile
5,280 feet =1 stat. mile
6,085 feet =1 nautical mile.

Miscellaneous

3 inches =1 palm.
4 inches =1 hand.
9 inches =1 span.
18 inches =1 cubit.
21.8 in. =1 Bible cubit.
2½ ft. =1 military step.

Square Measure

144 sq. in. =1 sq. foot.
9 sq. ft. =1 sq. yd.
30¼ sq. yds. =1 sq. rod.
40 sq. rods =1 rood.
4 roods =1 acre.
640 acres =1 sq. mile.

Surveyors' Measure

7.92 inches =1 link.
4 rods =1 chain.
25 links =1 rod.
10 square chains or 160 square rods =1 acre.
640 acres =1 sq. mile.
36 square miles (6 miles square) =1 township.

Cubic Measure

1,728 cu. in. =1 cu. ft.
27 cu. ft. =1 cu. yd.
128 cu. ft. =1 cord (wood)
40 cu. ft. =1 ton (ship'g)
2,150.42 cu. inches =1 standard bushel.
268.8 cubic inches =1 standard gallon.
1 cubic ft. =about ⅘ of a bushel.

Metric Equivalents

Linear Measure

1 centimeter =0.3937 in.
1 decimeter =3.937 in. = .0328 feet
1 meter =39.37 in. = 1.0936 yards
1 dekam'r =1.9884 rods.
1 kilom'r =0.62137 mile.
1 in. =2.54 centimeters.
1 ft. =3.048 decimeters.
1 yard =0.9144 meter.
1 rod =0.5029 dekam'r.
1 mile =1.6093 kilom'rs.

Square Measure

1 sq. centim't'r =0.1550 sq. in.
1 sq. decimeter =0.1076 sq. ft.
1 sq. meter =1.196 sq. yd.
1 arc. =3.954 sq. rd.
1 hektar =2.47 acres.
1 sq. kilometer =0.386 sq. m.
1 sq. in. =6.452 square centimeters.
1 sq. ft. =9.2903 square decimeters.
1 sq. yd. =0.8361 sq. m.
1 sq. rd. =0.2529 arc.
1 acre =0.4047 hektar.
1 sq. m. =2.59 sq. kilometers.

Measure of Volume

1 cu. centimeter =0.061 cu. in.
1 cu. decimeter =0.0353 cu. ft.
1 cu. mr. / 1 stere = 1.308 cu. yd. / 0.2759 cd.
1 liter = 0.908 qt. dry / 1.0567 qt. liq.
1 dekaliter =2.6417 gal.
1 hektoliter =2.8375 bu.
1 cu. in. =16.39 cubic centimeters.
1 cu. ft. =28.317 cubic decimeters.
1 cu. yd. =0.7646 cu. meter.
1 cord =3.624 steres.
1 qt. dry =1.101 liters.
1 qt. liq. =0.9463 liter.
1 gal. =0.3785 dekaliter.
1 pk. =0.881 dekaliter.
1 bu. =0.3524 hektoliter.

Weights

1 gram. =0.0527 oz.
1 kilogram =2.2046 lb.
1 metric ton =1.1023 English ton.
1 oz. =28.85 grams.
1 lb. =0.4536 kilogram.
1 English ton =0.9072 metric ton.

Approximate Metric Equivalents

1 decimeter =4 in.
1 meter =1.1 yards.
1 kilometer =⅝ mile.
1 hektar =2½ acres.
1 stere or cu. meter =¼ of a cord
1 liter = 1.06 qt. liq. / 0.9 qt. dry.
1 hektoliter =2⅝ bushel.
1 kilogram =2⅕ lb.
1 metric ton =2,200 lb.

Useful Information

Valuable Practical Receipts and Compositions

PLUMBER'S SOLDER.—Tin, 2 pounds, lead, 5 pounds.

HARD SOLDER.—Copper, 1 pound, zinc, 8 ounces.

YELLOW SOLDER.—Copper and zinc, equal parts.

YELLOW BRASS.—Zinc, 10 pounds, lead, 4 ounces, copper, 24 pounds.

BRONZE METAL.—Antimony, 1 pound, tin, 100 pounds, copper, 2 pounds.

SILVER COLORED METAL.—Tin, 50 pounds, bismuth, 1 pound, antimony, 3 pounds, copper, 3 pounds.

IMITATION SILVER.—Copper, 4 pounds, zinc, 4 ounces.

WHITE METAL.—Copper, 5 pounds, zinc, 3 pounds, lead, 1 pound, tin, 1 pound.

METAL FOR TAKING IMPRESSIONS.—Bismuth, 3 pounds lead, 1 pound, tin, 8 ounces.

RIVET METAL.—Tin, 5 pounds, zinc, 2 pounds, copper, 10 pounds.

TINNING ACID FOR BRASS OR COPPER.—Muriatic acid, 1 pound, give it all the zinc it will dissolve; add 4 ounces of sal ammoniac, 1 pint water.

FOR TINNING BRASS.—Water, 4 gallons, salt, 1 pint, cream tartar, 1 pound.

MIXTURE FOR SILVERING METALS.—Dissolve 2 ounces of silver in 3 grains of corrosive sublimate, add salt, 8 quarts, tartaric acid, 4 pounds.

TO SEPARATE SILVER FROM COPPER.—Sulphuric acid, one part, nitric acid, one part, water, one part, then boil the metal in the mixture until it dissolves; add a little salt and the silver will subside.

COMMON PEWTER.—Tin, 4 pounds, lead, 1 pound.

QUEEN'S METAL.—Tin, 9 pounds, antimony, 1 pound, lead, 1 pound, bismuth, 1 pound.

MOCK PLATINUM.—Copper, 4 pounds, zinc, 18 pounds.

TYPE METAL.—Lead, nine parts, antimony, two parts, bismuth, two parts.

Proportions of Various Compositions in Common Use

BABBITT METAL.—Tin, 89, copper, 3.7, antimony, 7.3.

FINE YELLOW BRASS.—Copper, 66, zinc, 34.

GUN METAL VALVES.—Copper, 90, tin, 10.

WHITE BRASS.—Copper, 10, zinc, 80, tin, 10.

GERMAN SILVER.—Copper, 33.3, zinc, 33.4, nickel, 33.3.

CHURCH BELLS.—Copper, 80, zinc, 5.6, tin, 10.1, lead, 4.3.

GONGS.—Copper, 81.6, tin, 18.4.

LATHE BRUSHES.—Copper, 80, tin, 20.

MACHINERY BEARINGS.—Copper, 87.5, tin, 12.5.

SHEATHING METAL.—Copper, 56, zinc, 44.

Safe Pressure on Bearings and Slides

Kind of Journal Bearing	Pressure per Sq. In. of Projected Area Pounds
Bearings on which the load is intermittent and the speed slow, such as crank-pins of shearing machines	3,000
Cross-head neck journals	1,300
Crank-pins of large, slow speed engines	800—900
" " marine engines, usually	400—500
Main crank-shaft bearings—marine engines (slow)	600
Main crank-shaft bearings—marine engines (fast)	400
Locomotive driving-axle journal	180—350
Railway journals	200
Fly-wheel shaft journals	150—250
Small engine crank pins	150—200
Slipper slide blocks, marine engines	100
Stationary engine slide blocks	25—125
" " " " usually	30— 60
Propeller thrust bearings	50— 70
Shaft in cast iron steps or seats	15

Per Cent of Profit Table

Profit is a percentage of the selling price and not of the cost. To have a profit of 25% upon sales, it is necessary that 33⅓% be added to cost price, and all other percentages in a similar way, as per table below.

To obtain a profit of—

12½%	Add to Cost *15%	**33⅓%**	Add to Cost 50%
15%	Add to Cost 17½%	**35%**	Add to Cost *55%
16⅔%	Add to Cost 20%	**37½%**	Add to Cost 60%
20%	Add to Cost 25%	**40%**	Add to Cost *65%
25%	Add to Cost 33⅓%	**42½%**	Add to Cost *75%
27½%	Add to Cost *37½%	**45%**	Add to Cost *80%
30%	Add to Cost *45%	**50%**	Add to Cost 100%

*These figures are a fraction from being exact, but are near enough for practical use

Table for Figuring Net Profits

And you mark your goods at one of these percentages above delivered cost.

If your cost of doing business figured on sales is represented by one of these figures:

%	10%	11%	12%	13%	14%
3	7 9/10 loss	8 9/10 loss	9 9/10 loss	10 9/10 loss	11 9/10 loss
5	5 1/5 loss	6 1/5 loss	7 1/5 loss	8 1/5 loss	9 1/5 loss
10	00 9/10 loss	1 9/10 loss	2 9/10 loss	3 9/10 loss	4 9/10 loss
15	3 5/11	2 5/11	1 5/11	00 5/11	00 6/11 loss
20	6 2/3	5 2/3	4 2/3	3 2/3	2 2/3
25	10	9	8	7	6
30	13 1/13	12 1/13	11 1/13	10 1/13	9 1/13
33 1/3	15	14	13	12	11
35	15 25/27	14 25/27	13 25/27	12 25/27	11 25/27
40	18 4/7	17 4/7	16 4/7	15 4/7	14 4/7
50	23 1/3	22 1/3	21 1/3	20 1/3	19 1/3
60	27 1/2	26 1/2	25 1/2	24 1/2	23 1/2
75	32 6/7	31 6/7	30 6/7	29 6/7	28 6/7
100	40	39	38	37	36

If your cost of doing business figured on sales is represented by one of these figures:

%	15%	16%	17%	18%	19%	20%
3	12 9/10 loss	13 9/10 loss	14 9/10 loss	15 9/10 loss	16 9/10 loss	17 9/10 loss
5	10 1/5 loss	11 1/5 loss	12 1/5 loss	13 1/5 loss	14 1/5 loss	15 1/5 loss
10	5 9/10 loss	6 9/10 loss	7 9/10 loss	8 9/10 loss	9 9/10 loss	10 9/10 loss
15	1 6/11 loss	2 6/11 loss	3 6/11 loss	4 6/11 loss	5 6/11 loss	6 6/11 loss
20	1 2/3	00 2/3	00 1/3 loss	1 1/3 loss	2 1/3 loss	3 1/3 loss
25	5	4	3	2	1	00 loss
30	8 1/13	7 1/13	6 1/13	5 1/13	4 1/13	3 1/13
33 1/3	10	9	8	7	6	5
35	10 25/27	9 25/27	8 25/27	7 25/27	6 25/27	5 25/27
40	13 4/7	12 4/7	11 4/7	10 4/7	9 4/7	8 4/7
50	18 1/3	17 1/3	16 1/3	15 1/3	14 1/3	13 1/3
60	22 1/2	21 1/2	20 1/2	19 1/2	18 1/2	17 1/2
75	27 6/7	26 6/7	25 6/7	24 6/7	23 6/7	22 6/7
100	35	34	33	32	31	30

If your cost of doing business figured on sales is represented by one of these figures:

%	21%	22%	23%	24%	25%	
3	18 9/10 loss	19 9/10 loss	20 9/10 loss	21 9/10 loss	22 9/10 loss	......
5	16 1/5 loss	17 1/5 loss	18 1/5 loss	19 1/5 loss	20 1/5 loss	......
10	11 9/10 loss	12 9/10 loss	13 9/10 loss	14 9/10 loss	15 9/10 loss	......
15	7 6/11 loss	8 6/11 loss	9 6/11 loss	10 6/11 loss	11 6/11 loss	......
20	4 1/3 loss	5 1/3 loss	6 1/3 loss	7 1/3 loss	8 1/3 loss	......
25	1 loss	2 loss	3 loss	4 loss	5 loss	......
30	2 1/13	1 1/13	00 1/13	00 12/13 loss	1 12/13 loss	......
33 1/3	4	3	2	1	00	......
35	4 25/27	3 25/27	2 25/27	1 25/27	00 25/27	......
40	7 4/7	6 4/7	5 4/7	4 4/7	3 4/7	......
50	12 1/3	11 1/3	10 1/3	9 1/3	8 1/3	......
60	16 1/2	15 1/2	14 1/2	13 1/2	12 1/2	......
75	21 6/7	20 6/7	19 6/7	18 6/7	17 6/7	......
100	29	28	27	26	25	......

Your percentage of net profit is represented by the figure at the junction of the two columns:

Explanation—If your cost of doing business is 15% of your gross sales and you mark goods at 25% above cost, your net profit is 5% on sales—as shown in diagram. If your cost of doing business is 18% and you mark your goods at 60% above cost, your net profit is 19½% on sales.